

**STRATEGIC ANALYSIS FOR V7 ENIGMA**

by

Betty Chan

Bachelor of Science in Management and Systems Science, Simon Fraser University,  
2003

PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF BUSINESS ADMINISTRATION

In the Management of Technology Program  
of the  
Faculty  
of  
Business Administration

© Betty Chan 2013

SIMON FRASER UNIVERSITY

Term Summer 2013

All rights reserved. However, in accordance with the *Copyright Act of Canada*, this work may be reproduced, without authorization, under the conditions for *Fair Dealing*. Therefore, limited reproduction of this work for the purposes of private study, research, criticism, review and news reporting is likely to be in accordance with the law, particularly if cited appropriately.

# Approval

**Name:** **Betty Chan**  
**Degree:** **Master of Business Administration**  
**Title of Project:** **Strategic Analysis for V7 Enigma**

**Supervisory Committee:**

---

**Dr Aidan Vining**  
Senior Supervisor  
Professor, Strategy - Faculty of Business Administration

---

**Dr Elicia Maine**  
Second Reader  
Academic Chair, Management of Technology MBA and  
Associate Professor, Technology and Operations Management  
- Faculty of Business Administration

Date Approved: \_\_\_\_\_

## **Abstract**

V7 Entertainment, a Vancouver, BC based video gaming company is conducting a feasibility study on technology for a brand new game console that they have dubbed V7 Enigma. The technology uses field programmable gate arrays to allocate console hardware resources dynamically to different engines for a game. V7 must decide how they should strategically enter the game console market. This paper examines external and internal factors and recommends an optimal strategy among different alternatives of which V7 can use to enter the market.

The game console industry is highly competitive and has great barriers to entry. Entering requires high set up costs and both direct and indirect network effects profoundly influence the market. V7 has strengths in innovation; however, these strengths are not in the hardware field. This paper recommends that V7 avoid entering the highly competitive game console market directly, but instead, licence the technology to existing hardware manufacturers.

**Keywords:** strategic analysis; game consoles; video games; network effects

## **Dedication**

This paper is dedicated to my husband and best friend, Larry Lee for his support and patience throughout the MOT MBA program and to our miniature schnauzers, Milhouse and Miley for keeping me company through all the countless hours I spent working on assignments.

## **Acknowledgements**

I would like to thank Dr Aidan Vining for his guidance and direction throughout the entire process of creating this work. I would also like to thank Mike Torillo of V7 Entertainment Inc. for supplying the topic and sharing resources that made this paper possible.

# Table of Contents

Approval.....	ii
Abstract .....	iii
Dedication .....	iv
Acknowledgements .....	v
Table of Contents .....	vi
List of Figures .....	viii
List of Tables.....	ix
<b>1: Introduction.....</b>	<b>1</b>
1.1 Objective of the Strategic Analysis.....	1
1.2 The Framework Used in the Strategic Analysis .....	2
1.3 Summary .....	3
<b>2: V7 Entertainment Inc. &amp; Dr Harold Ishebabi .....</b>	<b>4</b>
2.1 Introduction to V7 Entertainment.....	4
2.1.1 The Four Portfolios of V7 .....	5
2.2 Introduction to Dr Harold Ishebabi PhD .....	6
2.3 The Partnership between V7 and Dr Ishebabi.....	7
2.3.1 The Next Step in Their Partnership.....	8
2.4 Summary .....	9
<b>3: V7 Enigma .....</b>	<b>10</b>
3.1 V7 Enigma – A Next Generation Console .....	10
3.2 Thinking Outside the Box with FPGAs .....	15
3.3 How to Keep Gamers Wanting More.....	16
3.4 Summary .....	17
<b>4: The Video Game Console Industry .....</b>	<b>19</b>
4.1 Evolution of the Gaming Console .....	19
4.2 Seventh Generation Highest Scorers.....	23
4.2.1 Nintendo Wii.....	24
4.2.2 Microsoft Xbox 360 .....	25
4.2.3 Sony PlayStation 3 .....	27
4.3 What to Expect in the Next Generation.....	28
4.4 The Ups and Downs of the Video Game Market .....	29
4.5 Who is Playing .....	31
4.6 Common Game Console Marketing Strategies .....	32
4.7 Summary .....	35
<b>5: Game Console Industry Analysis.....</b>	<b>36</b>
5.1 Intense Rivalry between Giants.....	38
5.2 New Entrants Don’t Stand a Chance.....	40
5.3 Improved Technology is Increasing the Threat of Substitutes .....	42

5.4	Customer Bargaining Power is Low but Increasing.....	43
5.5	Bargaining Power of Suppliers are High.....	45
5.6	Purchasing the Game Console is Just the Beginning .....	46
5.7	Government Intervention has Low Effects .....	47
5.8	Summary .....	47
<b>6:</b>	<b>A Systematic Look at V7's Strengths and Weaknesses .....</b>	<b>49</b>
6.1	Stage 1: V7's Potential Strengths and Weaknesses.....	50
6.2	Stage 2: Categorizing V7's Organizational Difference.....	53
6.3	Stage 3: Investigating the Source of V7's Competitive Advantage .....	56
6.4	Stage 4: Evaluating V7's Competitive Advantage.....	58
<b>7:</b>	<b>Where Would V7 Fit in the Game Console Industry? .....</b>	<b>60</b>
7.1	Fitting in By Mitigating Threats.....	60
7.2	Utilizing V7's Strengths to Minimize Their Weaknesses .....	62
7.3	Summary .....	63
<b>8:</b>	<b>What are V7's Options? .....</b>	<b>64</b>
8.1	Option A – Take the Completed System to Market .....	65
8.2	Option B – Partner with an OEM.....	67
8.3	Option C – License the Technology.....	69
8.4	Option D – Do Not Pursue V7 Enigma .....	71
8.5	Summary .....	73
<b>9:</b>	<b>Recommendation: Stay Away From Hardware .....</b>	<b>75</b>
	<b>Bibliography.....</b>	<b>78</b>

## List of Figures

Figure 4.1 Timeline of the Top Selling Console for Its Generation. ....	20
Figure 4.2 Comparison of Units Sold of Different Video Game Console from Different Generations .....	22
Figure 4.3 Distribution of Game Console Sales over Its Lifetime. ....	34
Figure 5.1 Summary of the Competitive Forces of the Game Console Industry.....	37
Figure 5.2 Price vs. Quality Strategies of Current and Future Game Console Firms.....	39
Figure 6.1 Strengths and Weaknesses Related to Primary and Support Activities in V7's Value Chain.....	52



## List of Tables

Table 2.1	Summary of V7 Entertainment Inc. management team. ....	5
Table 2.2	List of funding V7 has received to date .....	5
Table 3.1	Initial Estimates for V7 Enigma Pre-Prototype.....	11
Table 3.2	Initial Estimates for First V7 Enigma Prototype .....	13
Table 3.3	Summary of initial estimates for V7 Enigma Project.....	14
Table 4.1	Global Sales of PS3, Wii and Xbox 360 for 2009 – 2012 and Lifetime Total.....	23
Table 4.2	Static Video Game Console Sales, Selected Countries: 2011 .....	31
Table 5.1	Summary of the Competitive Forces that Impact Firms in the Game Console Industry .....	48
Table 6.1	Choices for Evaluation of the Extent of Strength or Weakness of ASSIST analysis.....	49
Table 6.2	Assessment of Internal Factors for Strategic Advantage for V7 Entertainment .....	53
Table 6.3	Strengths and Weaknesses as Potential Sources of Competitive Advantage and Disadvantage for V7 Entertainment .....	56

# **1: Introduction**

This Introduction describes the purpose of and the analysis frameworks used in this strategic analysis.

## **1.1 Objective of the Strategic Analysis**

Harold Ishebabi PhD, a Computer Engineering researcher, approached V7 Entertainment Inc. (V7); a Vancouver based video gaming development company, with a patented technology that could potential change the way developers create video games. Traditionally, game developers create games for specific console specifications. With the proposed new technology, game developers would be able to develop code without worrying about the constraints of the hardware. Instead, the console resourcing would dynamically adjust to the requirements indicated by software code. Dr Ishebabi wants V7 to help him incorporate his technology into a game console, package this console into a new generation gaming solution, and bring the product into the video game console market.

The new technology is in its early research and development phase. If the full development of this technology were successful, V7 would incorporate the technology into a brand new game console called “V7 Enigma”. V7 Enigma will deliver games online through V7’s version of an online application store (app store). The firm envisions the app store to resemble other online media delivery services such as Netflix in which

video game players (gamers) pay a monthly subscription that allows them access to a library games.

The purpose of this strategic analysis is to see how V7 can position itself in the game console market with the V7 Enigma console. The analysis will also compare possible options for how V7 could introduce this technology to the market. A possible option could also be that they not pursue this venture at all. This paper will conduct an evaluation of each option and a recommended strategy will conclude the strategic analysis.

## **1.2 The Framework Used in the Strategic Analysis**

The analysis framework used in this paper uses both ideas from two references: Simon Fraser University, MOT MBA Projects – General Guidelines (Collins, 2008) and A Framework for Comprehensive Strategic Analysis (Boardman, Shapiro and Vining, 2004).

Chapters 2, 3 and 4 of this paper will describe the firm, the product and the game console industry. The information will give the reader some background on the key players that are involved, the technology and the industry. These chapters will give context to the external and internal analyses that follow.

Chapters 5 and 6 will present an analysis of the current industry (external analysis) and the analysis of the current firm (internal analysis) respectively. The external analysis is an investigation of the opportunities and threats in the industry and uses Porter's Five Forces framework (Porter, 1979) to measure the attractiveness and competitiveness of the game console industry. Porter's framework looks at how

competition, new entrants, substitutes, customers and suppliers affect the industry. The external analysis will also look at two additional influences on the industry: complementary products and government regulations. The internal analysis will show the relevant characteristics of the firm. It will describe the firm's current situation - its strategy, core competencies, strengths, weaknesses, value chain and financial situation. The analysis is done using a four-stage systematic assessment described in the article, "Competitive Advantage and Internal Organizational Assessment" by Duncan, Ginter and Swayne (1998).

Chapter 7 presents an assessment of the firm's current situation and proposes changes to areas that require improvement. The final two chapters will list strategic options the firm can consider and provide an optimal recommendation. The possible options are analysed using information from the external analysis, internal analysis and current firm assessment. Costs and benefits as well as worst-case, average-case and best-case scenarios are analysed and compared to support the recommendation that will conclude the paper.

### **1.3 Summary**

The objective of this strategic analysis is to analyse the game console industry (external analysis) and V7 Entertainment (internal analysis) to formulate how V7 will be able to utilize Dr Ishebabi's technology in the game console market. Research on the firm, product and industry along with an external and internal analysis and assessment will help achieve this objective. A list of possible strategic options and a recommendation will conclude this strategic analysis.

## **2: V7 Entertainment Inc. & Dr Harold Ishebabi**

This chapter will introduce V7 Entertainment Inc. (V7), Dr Harold Ishebabi and describe their relationship in regards to the V7 Enigma project.

### **2.1 Introduction to V7 Entertainment**

V7 Entertainment Inc. is a Vancouver based, start-up focusing on video game and video game technology development. In their 2011 business plan, they state that their mission “is to be an innovative leader in full service digital distribution in the games industry delivering experiences that evolve beyond traditional models and consoles” (V7 Entertainment, 2011). They also state that their short-term vision “is to provide technology and tools to quickly create, market certify, and co-produce innovative games and titles that captivate” (V7 Entertainment, 2011). Their long-term vision “is delivery of experiences that expand the range of emotional responses from players” (V7 Entertainment, 2011). V7 plans to achieve the goals set out through short term and long term visions by offering full service media creation with quality production and delivery through erudite management.

The founders of V7 are Ken Zheng, Elmar Dela Cruz, Karthik Venkateshan, Mike Torillo and Mike Cornford. The five founders met during their enrolment in the Masters of Digital Media (MDM) program at the Centre for Digital Media in Vancouver, British Columbia. Although they are young, the founding members have already obtained many years of experience in the video game industry. The founders came together in 2008 with an idea for a video game that led to the creation of the company. Today, the company consists of seventeen employees including the management team. The current

management team consists of a five people. Table 2.1 summarizes the management team at V7 Entertainment Inc.

Table 2.1 Summary of V7 Entertainment Inc. management team.

Name	Title	Description
Xiaonan (Ken) Zheng	Art Director	Leads 3D Art & Design
Elmar Dela Cruz	Creative Director	Leads 2D Art & Design
Karthik Venkateshan	Technology Director	Leads Programming & Business Development
Mike Torillo	Production Director	Leads Production & Business Development
Alan Cornford, PhD	Strategy Director	Leads Business Strategy

Source: author, with data from V7Entertainment (2013)

Like most start-ups, the group had limited resources. They used Dela Cruz's garage as the base of the original operations. The partners incorporated V7 Entertainment in 2010. Most of their financing has come from investors and V7 is yet to be profitable.

Table 2.2 lists the funding that V7 has received to date.

Table 2.2 List of funding V7 has received to date

Funding Type	Amount
Private Financing	\$1.25M
SR&ED	\$360k
IRAP	\$30k
MITACS	\$15k
<b>Total</b>	<b>\$1.655M</b>

Source: author, with data from V7Entertainment (2013)

### 2.1.1 The Four Portfolios of V7

V7 categorizes their products into the following four game/technology portfolios: (1) V7 Labs, (2) V7 Partners, (3) Game Titles and (4) Migration to AAA Multiplatform

Engine. V7 Labs is their portfolio of research and development projects. The projects focus on gaming engines and tools, which V7's development team uses for their game development. V7 Labs has one product available for external licensing called the Hive Engine. The Hive Engine helps developers inexpensively integrate Flash technology into Microsoft's Xbox 360 games. The V7 Enigma falls under the V7 Labs portfolio. V7 Partners is V7's portfolio of collaborations with other independent game studios using V7's technologies. Discussion with other studios that have shown interest have not resolved in any tangible projects. V7's game library falls under their Game Title portfolio. They produce games for Xbox Live Arcade (XBLA), Xbox Live Indie (XBLI), iOS and Android platforms. They have released a handful of Xbox and mobile games. Their largest project licensed with NBC/Universal, is an XBLA game based on a well-known hockey movie is current wrapping up production. "AAA" is the highest rating in game quality. V7's Migration to AAA Multiplatform Engine portfolio consists of their planned technologies for future consoles.

## **2.2 Introduction to Dr Harold Ishebabi PhD**

Dr Harold Ishebabi received his PhD in computer engineering from the Universität Potsdam in Berlin in 2011. His research topics included reconfigurable architectures, multiprocessor system-on-chip (MPSoCs), embedded systems, low power design methodologies and signal processing. His PhD thesis focused on the task-level parallelism and architecture customization using field programmable gate arrays (FPGA). The objective of his thesis was to find a suitable application of this technology (afriscience.org, 2010). He had two patents issued in 2013. The first patent was for his technology titled, "reconfigurable computing system and method of developing

application for deployment on the same” and the other was for his technology titled, “method and system for multi-mode instruction-level streaming”. Dr Ishebabi is also a member of the Institute of Electrical and Electronics Engineers (IEEE) computer society, a prestigious association of technology professionals. This association’s “core purpose is to foster technological innovation and excellence for the benefit of humanity” (www.ieee.org, 2013).

### **2.3 The Partnership between V7 and Dr Ishebabi**

Dr Ishebabi was working as the Chief Technology Officer (CTO) in a start-up called Secodix. Continuing with the objectives of his thesis, Dr Ishebabi was looking to find applications for his technology. With little success at Secodix, Dr Ishebabi approached V7 hoping to apply his FPGA technology to game consoles.

The agreement of partnership is that V7 will provide the game engine technology for Dr Ishebabi so that he can test game applications on his software compiler and FPGA technology. The agreement allows V7 the licensing right for the use of Dr Ishebabi’s FPGA patent. The project is in its early stage with all current work done on pre-prototyping the compiler and hardware architecture. As a measure of success for the project, V7 and Dr Ishebabi must accomplish two technical objectives. First, the performance of the game engine must enable sophisticated physics not possible using current standard technology. Second, the game developer’s experience using the engine must be smooth with the development tools well integrated into the engine and the engine must show a high level of abstraction that will hide the complexity of the compiler. The next agreed upon step is a technical feasibility study as detailed below.



### 2.3.1 The Next Step in Their Partnership

The purpose of the feasibility study is to investigate whether the requirements of the two success measures mentioned above is obtainable. There are three milestones during the feasibility study:

1. *Completion of a Market Analysis:* V7 will compile marketing information to obtain a better understanding of the gaming performance they need to deliver. In this case, V7 will project the performance of competing consoles six years into the future, and use this information to make further projections on what future games might be able to do. V7 will use performance benchmarks to estimate what is possible today in terms of artificial intelligence and physics, and predict what sort of computations might be possible. This analysis will give V7 an idea of what additional console performance is required such that the gamer will have a unique experience through greater complex computations.
2. *Completion of a Hardware Performance Analysis:* V7 will then analyse which hardware architecture will be able to deliver the required additional performance revealed through the market analysis. The focus here will be on the general architecture, bottleneck areas, and component costs. V7 will use road maps of chip manufacturers to estimate the performance, density and cost of Central Processing Units (CPU), Graphical Processing Units (GPU) and FPGAs for the next six years. This will give them insights on both technical and business feasibility.

3. *Completion of a Software Tool Analysis:* The goal of this analysis is to investigate feasible architecture for creating a software tool for game development that is easy to use with the proposed hardware from the results of the hardware performance analysis. The metrics analysed will be ease of integration, level of automation and abstraction without introducing unnecessary concepts and design flows.

If the feasibility study determines that meeting all the requirements is indeed viable, the next step will be to gather detailed specifications for constructing the hardware and software.

## **2.4 Summary**

This chapter introduced the firm and the key stakeholders of the V7 Enigma project. Presented was a description of the company, its four portfolios and descriptions of some of its products as well as some background on Dr Ishebabi, the inventor of the key differentiating technology of the V7 Enigma console. Dr Ishebabi is searching for a medium to apply his technology and approached V7 to help him conduct a feasibility study for video game consoles. The feasibility study will include three analyses: (1) a market analysis, (2) a hardware performance analysis and (3) a software tool analysis.

To measure the feasibility of the product, V7 will consider two items: (1) the performance of the game and (2) the game developer's development experience. If the feasibility study shows positive results, V7 will continue with the full development of the game console.

### **3: V7 Enigma**

This chapter will describe V7 Enigma in more detail. The purpose of this section is to give the reader a description of the product and to highlight the main features that make it unique.

#### **3.1 V7 Enigma – A Next Generation Console**

V7 Enigma is a conceptual game console. As mentioned in the previous chapter, it is the proposed product of the joint venture between V7 Entertainment and Dr Ishebabi. V7 Enigma is in its pre-prototype phase of development. The console will use field-programmable gate array (FPGA) technology along with Dr Ishebabi's patented algorithm to optimize video game software execution and relieve game developers from the constraints of console hardware specifications.

Game software is developed then copied onto a readable medium such as a disk or cartridge for consumers to purchase and play on certain consoles. A game designed for a specific type of console will not will not operate on a different type of console. That is, a game created for a PlayStation 3 (PS3) will only be playable on a PS3 and will not be playable on a Microsoft Xbox 360 or Nintendo Wii. Developers design video games to adhere to console hardware specifications. Developers cannot push their game past the hardware limits of the console even if it will enhance the playing experience of the gamer. V7 hopes to revolutionize game development with V7 Enigma. The FPGA technology discovered by Dr Ishebabi will allow game developers to control the allocation of resources of a console. With the FPGA technology, developers will be able to enhance aspects of their game when and where they choose. V7 believes that it is the

right time to take advantage of the technology due to the decreasing costs of FPGAs (Octopart.com, 2013).

V7 also envisions V7 Enigma to deliver games similarly, to how current television providers deliver television content – through subscriptions. The Enigma user interface will resemble an app store similar to the ones available for mobile devices. Gamers will navigate through the app store to find game channels that they want to subscribe. Game software developers will host one or more channels on Enigma and be responsible for the releases, updates and pricing of their own games (V7 Entertainment, 2013). In order for this subscription model to succeed, games will need to be episodic to keep consumers subscribed.

Table 3.1 and Table 3.2 show the projected financing required for the pre-prototype and first prototype phases of the V7 Enigma project. The entire pre-prototype plus the first prototype phase will require 18 months. For the pre-prototype phase, V7 requires four researchers and two business development employees for the seven-month phase. The first prototype will require six researchers. It will also require two business development employees for the first five months then an additional business development employee for the remaining six months.

*Table 3.1 Initial Estimates for V7 Enigma Pre-Prototype*

		PRE-PROTOTYPE						
		Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
<b>Role/Resource</b>	<b>Amount</b>							
<b>Research Team</b>								
Researcher	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Researcher	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00

Researcher	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Researcher	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Researcher	\$ 8,333.00							
Researcher	\$ 8,333.00							
<b>Business Dev</b>								
Bus1	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Bus2	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Bus3	\$ 8,333.00							
<b>Overheads</b>								
Office		\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00
Equipment		\$ 15,000.00						
Travel					\$ 5,000.00			\$ 5,000.00
Contingency	10%	\$ 6,799.80	\$ 5,299.80	\$ 5,299.80	\$ 5,799.80	\$ 5,299.80	\$ 5,299.80	\$ 5,799.80
	Totals:	\$ 67,998.00	\$ 52,998.00	\$ 52,998.00	\$ 57,998.00	\$ 52,998.00	\$ 52,998.00	\$ 57,998.00
	Cumulative :	\$ 67,998.00	\$ 120,996.00	\$ 173,994.00	\$ 231,992.00	\$ 284,990.00	\$ 337,988.00	\$ 395,986.00

Source: V7Entertainment (2013)

Table 3.2 Initial Estimates for First V7 Enigma Prototype

	FIRST PROTO TYPE										
	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14
<b>Role/Resource</b>											
<b>Research Team</b>											
Researcher	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Researcher	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Researcher	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Researcher	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Researcher	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Researcher	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
<b>Business Dev</b>											
Bus1	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Bus2	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
Bus3						\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00	\$ 8,333.00
<b>Overheads</b>											
Office	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
Equipment	\$ 30,000.00										
Travel				\$ 10,000.00				\$ 10,000.00			
Contingency	\$ 10,166.40	\$ 7,166.40	\$ 7,166.40	\$ 8,166.40	\$ 7,166.40	\$ 7,999.70	\$ 7,999.70	\$ 8,999.70	\$ 7,999.70	\$ 7,999.70	\$ 7,999.70
	\$ 101,664.00	\$ 71,664.00	\$ 71,664.00	\$ 81,664.00	\$ 71,664.00	\$ 79,997.00	\$ 79,997.00	\$ 89,997.00	\$ 79,997.00	\$ 79,997.00	\$ 79,997.00
	\$ 497,650.00	\$ 569,314.00	\$ 640,978.00	\$ 722,642.00	\$ 794,306.00	\$ 874,303.00	\$ 954,300.00	\$ 1,044,297.00	\$ 1,124,294.00	\$ 1,204,291.00	\$ 1,284,288.00

Source: V7Entertainment (2013)

Table 3.3 shows the summary of initial estimates that V7 predicts they will require for the pre-prototype and the first prototype of the V7 Enigma based on the estimates from Table 3.1 and Table 3.2. The total estimated cost for the pre-prototype and first prototype is \$1.3 million CDN.

*Table 3.3 Summary of initial estimates for V7 Enigma Project*

<b>Timeline</b>	Pre-Prototype & First Prototype - 18 months
<b>Resources</b>	6 researchers, 3 bus devs, working for a \$100k annual salary
<b>Pre-Prototype</b>	\$400k
<b>First Prototype</b>	\$900k
<b>Total</b>	\$1.3M

*Source: author, with data from V7Entertainment (2013)*

### **3.2 Thinking Outside the Box with FPGAs**

Popular consoles like the Sony PlayStation 3 (PS3) and Microsoft's Xbox 360 have set hardware specifications. Game developers must design their games to adhere to individual console specifications. If the Physics Processing Unit (PPU) of the console can only handle a maximum number of physics calculations, it is not possible for the developer to program for more. On the other hand, if the number of physics calculations needed for satisfactory results falls below the maximum number available from the PPU, the extra resources are wasted. Field programmable gate array (FPGA) is the hardware technology required to allow the V7 Enigma to overcome console hardware restrictions and the under-utilization of the hardware resources.

FPGAs are reprogrammable silicon chips (National Instruments, 2012). Hardware manufacturers can program and reprogram the FPGAs for specific purposes after installation (Altera, 2013). The V7 Enigma will use Dr Ishebabi's algorithm to program the FPGAs so that they dynamically adjust to the game developer's specifications. V7 Enigma will allow the dynamic reprogramming of FPGAs in real time. If the developer decides that more resources are required for physics then they will tell V7 Enigma to dedicate more resources to the PPU. If the developer later decides that for a different scene in the game, the game requires less physics but instead enhanced graphics through more computing power of the Graphics Processing Unit (GPU), then they will tell V7 Enigma to shift resources from the PPU to the GPU. Using this technology, game developers can utilize all the resources on the hardware and develop games to their full vision and thus enhancing the gaming experience for the gamers.



### **3.3 How to Keep Gamers Wanting More**

V7 believes that the best complement to the V7 Enigma is episodic games. Episodic games are games that tell a story. The game developer releases the story in pieces or episode and charges a fraction of the price of a full game for each piece. An episode costs between \$10-15 USD compared to \$60 USD for a full game (Tayo S., 2013). The idea behind episodic games is similar to that of a television series where viewers watch new episodes weekly. The television writers build suspense into every episode so that viewers continue to watch. Similarly, video game developers of episodic games will release video game episodes in set intervals adding suspense to the end of each episode so that gamers will be interested in purchasing future episodes. The costs and benefits of this TV series business model for both the distributors and consumers also applies to gaming.

One benefit that episodic games have is that it allows the developer to release a pilot. The pilot will test whether there is a demand for the game before the developer invests more resources into the game's production. If the demand is not there, the company can obtain feedback as to why and try to improve the game or they can simply cease the development for that game (F. Cifaldi, 2013). Gamers pay a small price to test out the game through the pilot and if they are not interested, they cease to purchase more episodes without having invested too much money or time. This benefit carries on into future episodes even after the game passes the pilot stage.

A second benefit of episodic games is the flexibility of incorporating customizations into the series after each episode. Developers can learn what their target audience's preferences are and build future episodes that will satisfy them. By learning

more about what interests their audience, developers can design each episode such that the gamer will be enticed to continue purchasing future episodes. A very popular episodic game, *The Walking Dead*, created by an independent publisher, Telltale Games does this well. By giving their players options within the game and using the choices to define future episodes, keeps their players “hooked” to the game and willing to pay for future episodes (O. de Krester, 2013). These types of tailored improvements keep consumers interested in and subscribed to the game.

Another benefit of episodic games is the pricing strategy. Implementing an episodic pricing strategy could potential make greater revenues for developers. Revenues from an entire successful episodic series has the potential to exceed those of a single release of a traditional full-boxed game (Tayo S., 2013). However, if the game is not successful and production discontinues during early episodes, the company would recover less of its setup costs due to the lower price point of each episode and the inability to accumulate revenues from future releases. Although gamers could potentially spend more overall for a full series, they can also opt out of playing a series with only investing a fraction of what a full-boxed game would cost. It is up to the player to decide whether game is worth their time and money.

### **3.4 Summary**

The V7 Enigma is an idea for a new game console. Its main differentiating technology is a patented algorithm that will dynamically allocate FPGA resources during game development. With this technology, game developers do not have to program within the hardware partitions of the console. Giving control to the developers will allow games to utilize all the resources in a console and the result is better quality game play.

The vision V7 has for delivering games through the V7 Enigma is similar to that of a mobile device app store. Consumers will pay a monthly subscription for access then log into the app store to download games. V7 also hopes to concentrate their game library on episodic games, which they believe will be the future business model for video games.

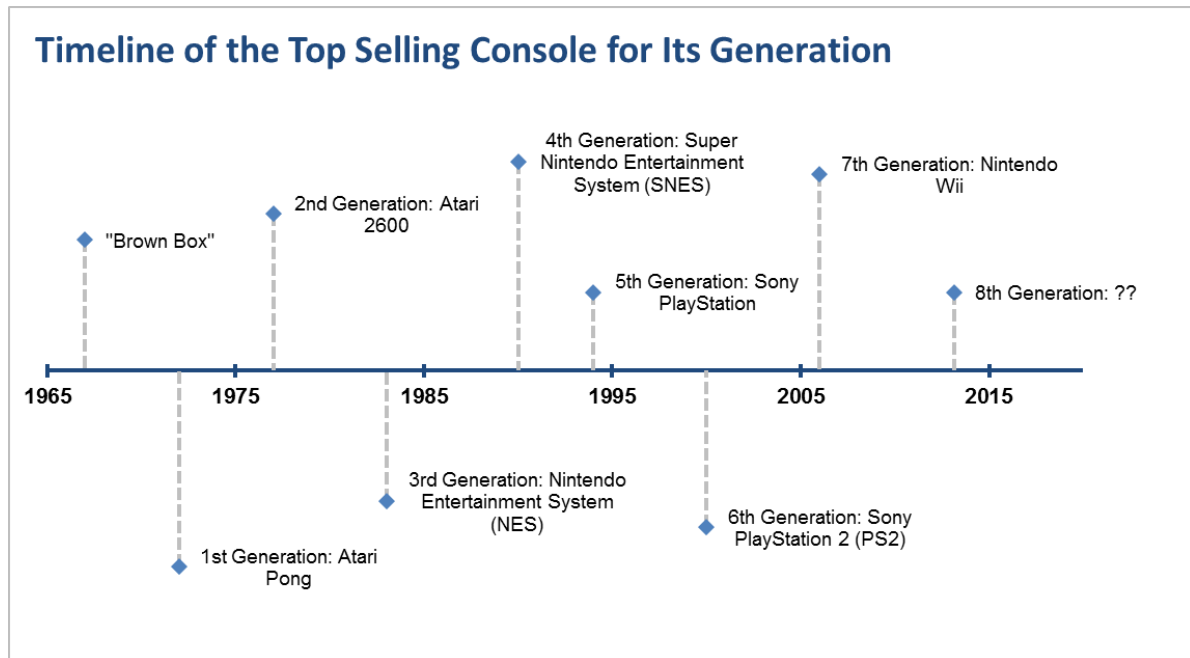
## **4: The Video Game Console Industry**

This chapter will describe the game console industry to give the reader some context to the market and environment in which V7 must compete. A brief history of the evolution of the gaming console and brief descriptions of current incumbents are given. Also, presented is a Market Description consisting of overall market size, customer demographics, market growth and market trends. Finally, a summary of the types of pricing strategies that current console manufacturers use will end the chapter.

### **4.1 Evolution of the Gaming Console**

In 1967, Ralph H. Baer introduced the first video game console called the “Brown Box”, named for its rectangular wooden box casing (M. Poh, n.d.). This invention led to the release of the Magnavox Odyssey and the beginning of what the video game industry considers as the first generation of game consoles. Since then there have been six more generations of consoles. Figure 4.1 is a timeline that shows the release year of the console with most sales of its generation.

Figure 4.1 Timeline of the Top Selling Console for Its Generation.



Source: author, with data from *A History of Home Video Game Consoles*, by M. Miller, 2005, retrieved on June 25, 2013 from <http://www.informit.com/articles/article.aspx?p=378141>

The first generation consoles delivered black and white games and used a plastic overlay for the television to enhance the graphics. In 1975, Atari and Sears collaborated to release the home version of Atari's Pong game. The console became a huge success with \$40 million in sales.

The second generation, known as the "Golden Age", introduced programmable video games. The Atari 2600 led the generation in sales with over 25 million units sold in its lifetime (Miller, 2005). The success of the second-generation consoles started a surge of companies entering the gaming market trying to capture rents. However, there was no innovation and the market was flooded with poor quality games. Many game developing companies went bankrupt and console sales plummeted. People in the in the video game

industry refer to this unfortunate period as the “video game crash of 1983” (Mazurowski, n.d.).

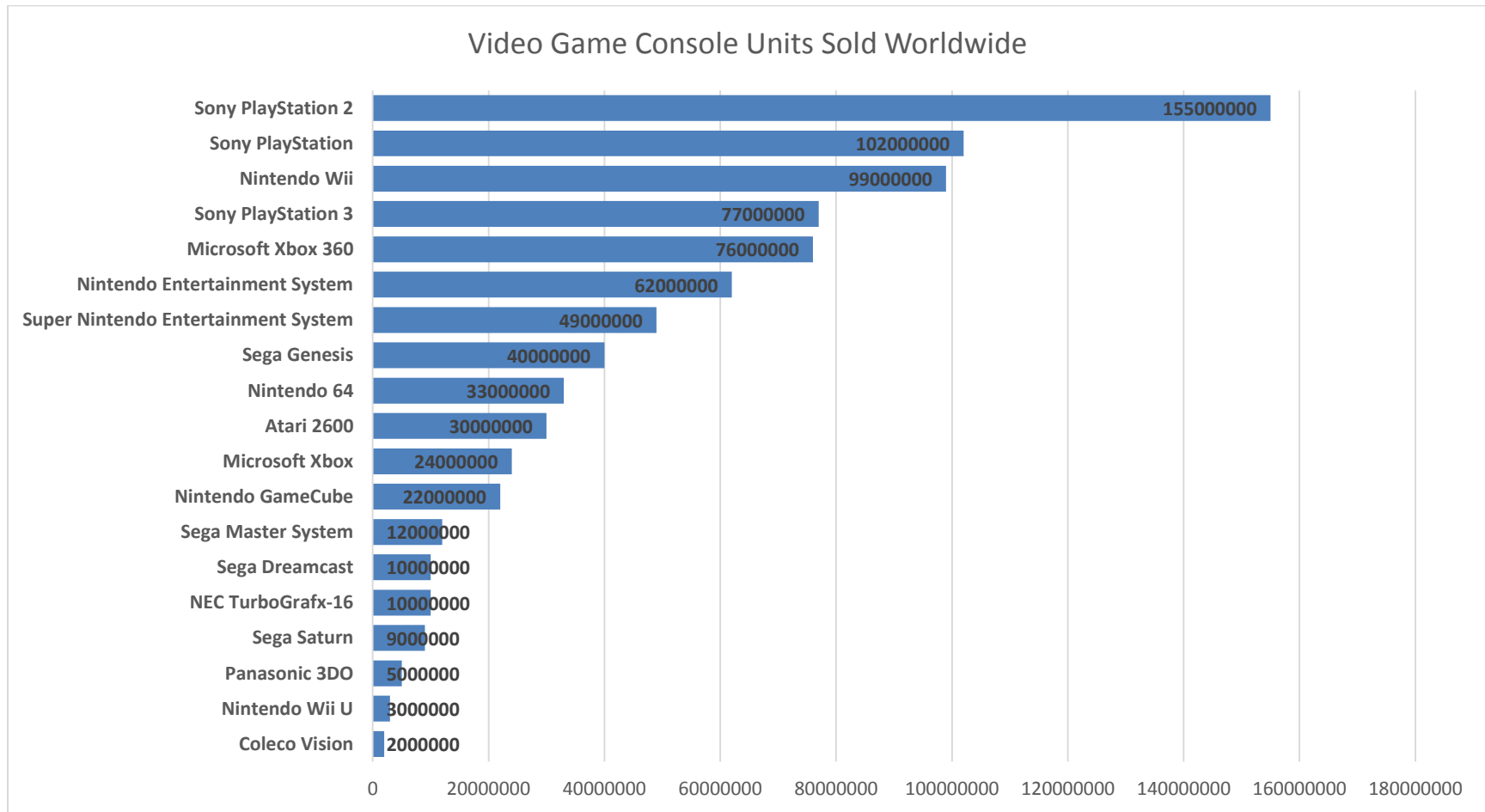
The third generation consoles brought the industry out of its rut. The lower cost of memory chips and more advanced technology elevated the quality of home gaming to the level available in arcades. The top selling console of this generation was the Nintendo Entertainment System (NES). It sold over 65 million units globally.

Nintendo continued their success into the fourth generation with their Super Nintendo Entertainment System (SNES). This generation of consoles further improved to increase the quality of at-home gaming. The largest competitors of this generation were Nintendo and Sega. Nintendo won the console wars of this generation with 46 million SNES units sold.

The fifth generation pushed the quality of at-home gaming even further and introduced a new competitor - Sony. Sony entered the video game console market with its PlayStation. Using a massive marketing campaign, this newcomer beat out its competition, selling over 50 million units.

The sixth generation introduced yet another major competitor into the market - Microsoft. Microsoft entered the market with its Xbox. However, the Xbox was no match for Sony’s PlayStation 2 (PS2), which is currently the best-selling console of all time with over 155 million units sold (tekrevue.com, 2013). Figure 4.2 shows a graphical comparison of lifetime units sold of different consoles from different generations. It is very apparent from the graph that Sony and Nintendo consoles dominate the industry. The sixth generation also led to the exit of Sega from the industry.

Figure 4.2 Comparison of Units Sold of Different Video Game Console from Different Generations



Source: author, with data from *The Best-Selling Video Game Consoles of All Time*, by J. Tanous, 2013, retrieved on June 25, 2013 from <http://www.tekrevue.com/2013/03/17/compared-the-best-selling-video-game-consoles-of-all-time/>

The three systems that dominate the seventh generation consoles are Nintendo's Wii, Sony's PlayStation 3 and Microsoft's Xbox 360. The end of the seventh generation is approaching with sales led by the Nintendo Wii and entering into the eighth generation with the releases of the Nintendo Wii U and the announcements of the Sony PlayStation 4 (PS4) and Microsoft's Xbox One (The Economist, 2013). An apparent trend with the eighth generation consoles is their television integration, which will allow users to control television programming within the consoles. Sales of the Wii U have not met expectations. Analysts are waiting for the 2013 holiday releases of the PS4 and Xbox One to see how the market reacts (Bolton, 2013).

## 4.2 Seventh Generation Highest Scorers

The seventh generation console era started in 2005. It has been the longest generation so far. This generation introduced motion sensor controls, online gaming and built-in multimedia centres. Three players dominate the seventh generation console market. These players are Nintendo with their Wii, Sony with their PlayStation 3 and Microsoft with their Xbox 360. The most sold console of this generation is the Nintendo Wii with over 98 million units sold in its lifetime as shown in Table 4.1.

Table 4.1 shows the global sales for the PS3, Wii and Xbox 360 for the years 2009 to 2012 along with their lifetime global sales figures. Although the Wii has the greatest lifetime sales, its sales declined drastically in 2011 and 2012.

*Table 4.1 Global Sales of PS3, Wii and Xbox 360 for 2009 – 2012 and Lifetime Total.*

Console	2009	2010	2011	2012	Lifetime
Sony PlayStation 3	13,019,454	13,896,438	14,119,093	10,519,903	71,027,638
	29.4%	31.2%	35.7%	43.2%	29.3%



<b>Nintendo Wii</b>	21,142,942	17,320,956	11,567,105	4,596,866	98,260,389
	47.8%	38.9%	29.3%	18.9%	40.6%
<b>Microsoft Xbox 360</b>	10,064,774	13,253,914	13,808,365	9,252,016	73,021,460
	22.8%	29.8%	35.0%	38.0%	30.1%
<b>Total</b>	44,227,170	44,471,308	39,494,563	24,368,785	242,309,487

Source: author, with data from 2012 Year on Year Sales and Market Share Update to December 15th, by W. D'Angelo, 2012, retrieved on June 2, 2013 from <http://www.vgchartz.com/article/250636/2012-year-on-year-sales-and-market-share-update-to-december-15th/>

The following sections describes each of the three major seventh generation consoles and the features that made them so successful.

#### 4.2.1 Nintendo Wii

In 2006, Nintendo released its fifth game console, the Wii. Although its processor and graphics are less advanced than are those of its rivals, the Wii is the highest selling gaming console of the seventh generation consoles. There were many contributions to its success: its broad audience reach, low price, new technologies and high quality.

Nintendo targeted the Wii towards family audiences and tried to keep the price of the Wii low relative to its competitors. This is evident from Nintendo's website that states that the Wii is "family fun at an amazing value" (Nintendo, 2013). Nintendo officially released the Wii in North America on November 19, 2006 with a price tag of \$250 US. The Wii's simple, PG-rated games and low price point made the Wii the preferred console for novice gamers and attracted a new market of non-gamers (CyberSurge, 2007).

The engineers at Nintendo designed the Wii to revolutionize the way gamers played video games. In fact, during its development Nintendo named the Wii, “Revolution” but then changed to Wii because it was easier for people to pronounce. The Wii has two unique features: first, is its wireless, motion sensor controllers and second is its WiiConnect24. The WiiConnect24 allows the device to detect and install updates from the internet while it is on standby mode. Its designers were diligent in designing the motion sensor controller to be seamless and realistic in detecting movements (Iloveindia.com, 2013). The motion sensor controller was the first of its kind for at-home game consoles and consumers could not wait to purchase the system to try it.

The Wii’s low price and novel new technologies helped it capture consumer interest. However, its high quality is what kept consumers interested for so long (Krishna, 2011). Even after Sony and Microsoft came out with their own versions of motion sensor controllers for their consoles, Nintendo was able to keep the Wii’s sales high. Both the PS3 and Xbox 360 systems have fatal crashes referred to as the “yellow light of death” and “the red ring of death” respectively (Krishna, 2011). The Wii however, is a high quality system that rarely breaks down.

Currently, the price of the Wii is \$129.99 USD (Best Buy, 2013). In 2012, sales for the unit have precipitously declined. This decrease in sales was greatly due to the end of the lifecycle for the Wii and the anticipated release of the Wii U, Nintendo’s eighth generation console.

#### **4.2.2 Microsoft Xbox 360**

Microsoft released its second game console, the Xbox 360 in North America on November 22, 2005 (Perry, 2005). It was the first of the seventh generation consoles

released from the three major console producers. It plays full 1080p HD games, has an online gaming service called Xbox Live and an available motion sensor input device called the Kinect. The release price of the basic non-backwards compatible version was \$299 USD and the 20GB HD packaged version was \$399 USD (Surette, 2005).

The Xbox 360 has been highly successful especially in the latter stages of its lifecycle. Much of its latter success was due to the Kinect. Microsoft released the Kinect in November 2010 (Albanesius, 2010). The Kinect took motion sensor gaming to another level by detecting motion without requiring players to hold on to a controller. This innovation differentiated the Kinect from the Wii remote and Sony's Move controller and helped boost its sales. In 2011, the Xbox exceeded the Wii in global sales for the first time (Bishop, 2012). Microsoft has sold over 73 million Xbox 360 consoles globally. Furthermore, a former executive from Microsoft admitted that much of the long-term success of the Xbox was the result of Sony's poor execution of the transition from the PS2 to the PS3 allowing Microsoft to capture some of Sony's PS2 customers (Complex Mag, 2012).

Today, the Xbox 360 retails for \$199 CDN for a 4GB console and \$299 CDN for a 250GB console (xbox.com, 2013). The Xbox website advertises the console as an "entertainment experience". Users can stream movies, music and photos through their console as well as connect to their mobile devices (xbox.com, 2013). Microsoft revealed on June 10, 2013 that they would be releasing its eighth generation console, the Xbox One, in November 2013 (Greenwald, 2013).

### 4.2.3 Sony PlayStation 3

Sony exited the sixth generation console lifecycle as the sales leader with their PlayStation 2 (PS2). They had 70% of the console market share (Complex Mag, 2012). They officially released its PlayStation 3 (PS3) in the US on November 17, 2006. During that time, there were two versions of the console, a 20GB unit for \$499 USD and a 60GB unit for \$599 USD (Altizer, n.d.). At \$200 USD above the price of an Xbox 360 with similar specifications, it was the most expensive out of the three major consoles.

Its most prominent feature is its built-in Blu-Ray player, which attributed to its high price point. The built-in Blu-Ray player makes the PS3 double as a movie-playing device as well as a game console. In 2006, a stand-alone Blu-Ray player cost close to \$1000, which was noticeably more than a PS3 (Kanellos, 2006). Therefore, having the ability to play Blu-Ray discs built into the PS3 at an even lower price than a stand-alone Blu-Ray player itself made the PS3 very attractive for potential buyers. Moreover, in 2008 it was evident that Blu-Ray technology had beaten HD-DVD in the digital videodisc standards war, which further increased the competitive advantage for the PS3 (Wilson, 2012).

In addition to playing Blu-Rays, the PS3 can also play CDs, DVDs and MP3 discs. The system also has a built-in media centre for streaming music, photos and videos from your computer and it has a built-in web browser. Newer versions are also 3D compatible (The Fanboy, n.d.). All of these features on top of its gaming capabilities make the PS3 an ultimate entertainment centre to attract even non-gamers.

Today, a brand new PS3 costs \$250 CDN. There are also many themed bundled packages available for sale (ebgames.ca, 2013). Although Sony went from first place in

console sales in the sixth generation to third place behind Nintendo and Microsoft in the seventh generation, the PS3 is still very much a success with over 71 million consoles sold globally (Table 4.1). On May 20, 2013, Sony released a video publicizing that they will announce details of their new PlayStation 4 during the 2013 Electronic Entertainment Expo (E3) (Strauss, 2013).

### **4.3 What to Expect in the Next Generation**

The eighth generation is the generation in which the V7 Enigma would compete. The expectation is that in this generation, gaming consoles will be entertainment hubs that will allow users to play games, stream movies, music and photos, watch television content, browse the internet and interact with other users online. Another expected trend will be the shift from traditional disc games to downloadable games.

The eighth generation of game consoles has already begun with the release of Nintendo's Wii U. The differentiator for the Wii U is its "Gamepad" controller. The Gamepad controller is a touchscreen controller that allows users control certain features of a game. It has a built-in camera and microphone and is included with the Wii U (wiiudaily.com, 2013). Sales of the Wii U have not met Nintendo's expectations; however, it is still very early in the eighth generation's lifecycle. Sony and Microsoft will be releasing their eighth generation consoles, the PS4 and Xbox One in the third quarter of 2013.

The start of the eighth generation console era also opens up doors for new entrants. A highly anticipated new console is the Ouya by Boxer8. Boxer8 advertises the Ouya as "the first totally open video game console". The company welcomes people to

open up the hardware and make modifications as they please. The Ouya costs \$99 USD, has media streaming capabilities and offers free trial versions of all their games. Its release date is June 25, 2013 but pre-orders have already started (ouya.tv, 2013).

Other newcomers entering the market are Gamestick by PlayJam and OTON by EnGeniux. Both are currently in their prototype phases. The Gamestick is a compact system targeted towards an Indie audience. The expected price of the Gamestick is \$79 USD. EnGeniux markets OTON as “the first autonomous game console” (www.otonx.com, 2013). Players are able to create and play customized games with minimal exertion. The expected price of the OTON ranges from \$279 to \$579 USD.

Finally, there have been speculation that the technology giant, Apple, will release a game console (Aguilar & Wagner, 2013). This rumour has also set off speculations that Google will be releasing their own game console in attempt to thwart the possibility of Apple dominating the console industry (Efrati, 2013). There has been no forecast on what price Apple or Google would release their consoles for and neither company has confirmed these speculations.

#### **4.4 The Ups and Downs of the Video Game Market**

The game console market is part of a \$65 billion global industry. The industry is both cyclical and seasonal. This industry includes consumer spending on software, gaming revenue and devices. Console gaming takes a majority of this market with 42% of total consumer spending (Bishop, 2013). Seventh generation console sales have been declining with a 21% decrease in US sales in 2012 (M. White, 2013). However, analysts

believe that this is a natural progression as the market for consoles is cyclical and the lifecycle of the seventh generation is nearing its end.

In the early 2000's, Sony's PS2 led the height of popularity for the sixth generation consoles. Overall console sales reached almost \$18 billion at its peak. Sales dropped to almost \$2 billion at the end of the sixth generation (Tansel, 2013). The seventh generation consoles led by Nintendo's Wii, peaked in sales in the late 2000's at around \$19 billion and has declined close to \$4 billion as the generation is ending (Tansel, 2013). If this cyclical trend continues, the market should see another surge in sales when the eighth generation consoles hit the market. Game publishers predict that the global market will grow to \$83 billion by 2016. Moreover, analysts from PricewaterhouseCoopers (PwC) predict that the global revenue from console sales will reach between \$30 and \$35 billion by 2016 (Nowak, 2013). There is also discussion however, on whether the game console industry will be sustainable in the future. The eighth generation consoles have shifted much of their focus to television and other non-game related features. Mobile platforms have changed the demand for games from AAA games to simpler, cheaper mobile games. If the demand continues in this direction, the eighth generation console market will be much smaller than it was for its predecessor.

Game consoles are also very seasonal products. Sales activity is generally linear for most of the year. However, during the winter months spikes in sales occur as consumers purchase consoles as gifts during the holiday season. Firms in the industry know that this time of year is very important for obtaining customers and capturing revenue. This is the reason why many of the firms are releasing their eighth generation console in the third and fourth quarters of 2013.

## 4.5 Who is Playing

The game console industry attracts consumers of different demographics from all around the globe. Console manufacturers that have a global market must alter their systems to adhere to the standards of different countries. There are three types of television standards in the world. They are National Television Standards Committee (NTSC), *Système Électronique pour Couleur avec Mèmoire* (SECAM) and Phase Alternating Line (PAL) (countrycode.org, n.d.). Games created for a console that follows one standard will not be playable on a console that follows another standard. Table 4.2 shows the 2011, video game console sales for selected countries. The greatest sales are in the United States and Japan, where they implement the NTSC standard. A 2009 study showed that there has been market growth for the gaming industry in emerging markets that implement the PAL standard. The Middle East, Russia, Greece, South Africa, Poland, India and Turkey were all part of this group. These markets equated to a €1.9 billion gaming industry that included hardware sales (Game Press, 2010).

Table 4.2 *Static Video Game Console Sales, Selected Countries: 2011*

<b>Country</b>	<b>US\$ million rsp</b>
US	4,103.20
Japan	1,016.00
France	842.6
UK	776.4
Canada	761.9
Germany	552.3
Australia	467.8
Italy	387.3
Spain	343.6
Poland	228.1
South Korea	215.4
Russia	203.7
Brazil	177.2
India	55.5



Hong Kong, China	40.4
South Africa	37.7
Indonesia	33.4
Turkey	32.4
China	2.4

*Source: author, with data from Can China Save Global Sales of Game Consoles? by U. Tansel, 2013, retrieved on May 25, 2013 from <http://www.globaltoynews.com/2013/04/can-china-save-global-sales-of-game-consoles.html>*

A detailed study of US gaming showed that as of January 2012, 56% of US households owned at least one seventh generation console. 75% of them are Nintendo Wiis. 80% of seventh generation console owners say that they are interested in the next generation consoles (Neilson, 2012). The average age of a gamer is 30 years old and the average age of a game purchaser is 35 years old. 47% of gamers are women. Women ages 18 or older are the fastest growing gamer demographic (30%) exceeding the boys ages 17 or younger demographic (18%) by 12% (ESA, 2012, p. 2-3).

#### **4.6 Common Game Console Marketing Strategies**

Due to all the high set up costs and expensive materials that go into creating a console, it is a common and known practice for game console companies to introduce their products into the market at loss to make their consoles affordable for more consumers. They do this because both direct and indirect network effects affect the game console industry.

Potential consumers perceive consoles with a large user base as more valuable, causing direct network effects (Suarez, 2005). They may believe that a console with a large user base is of higher quality or has more features or that there will be more online players to interact with, etc. In any case, these potential consumers will base their

purchasing decision on what other consumers have decided. As a result, the user base grows and attracts even more users.

The game console industry is a two-sided market because indirect network effects heavily influence it. A two-sided market is one that has two parties that have a common platform and the actions of each of the parties will affect the other one (Rysman, 2009). For the game console industry, the two parties involved are the consumers and complementary producers and the platform is the game console. If there is more consumer demand for a particular console, the complementary producers will create more products for that console. The increase in complementary products then leads to even higher consumer demand. Due to direct and indirect network effects, console producers are willing to take an early loss in order to capture market share. In the end, an oligopoly is left. These few dominant firms may not offer the best product but due to network effects, they capture the greatest market share (Gallaughan, 2004).

Console manufacturers try to make up some of this loss in console sales revenue through charging the game developer a fee per game sold using their platform (Rosmarin, 2012). Overtime, the loss per console decreases because as the demand for their consoles increase so will their production, which will lead to cost benefits from economies of scale. As companies recover from their losses over the lifetime of the console, they lower their prices further to attract more customers. As illustrated in Figure 4.3, there is a normal distribution of sales of consoles over its lifecycle.

Figure 4.3 Distribution of Game Console Sales over Its Lifetime.



Source: author

Other common sales strategies in the game console industry are offering limited edition units, bundles and additional options (learningmarket.net, n.d.). Their respective firms have all offered the Wii, PS3 and Xbox 360 in limited edition colours and prints. Typical bundles, which are also normally limited in quantity, will include extra controllers and games. Additional hardware like the Kinect will force consumers to purchase the Xbox 360 if they want to use the peripheral device because the Kinect will not work with any other console.

A new sales strategy for eighth generation consoles is expected. With the increasing popularity of downloadable games, it is possible that manufactures will start charging monthly subscription fees to access their game library. With subscription fees, manufacturers can subsidize the price of the console if consumers sign contracts that guarantee their subscriptions for future years. This business model is similar to that of cell phone providers who will subsidize the price of the cell phone when customers sign

exclusive cell phone services contracts. Microsoft has already implemented this model with their Xbox 360, selling the unit for \$99 when customers sign a two-year subscription to their Xbox Live service (Campbell, 2012).

## **4.7 Summary**

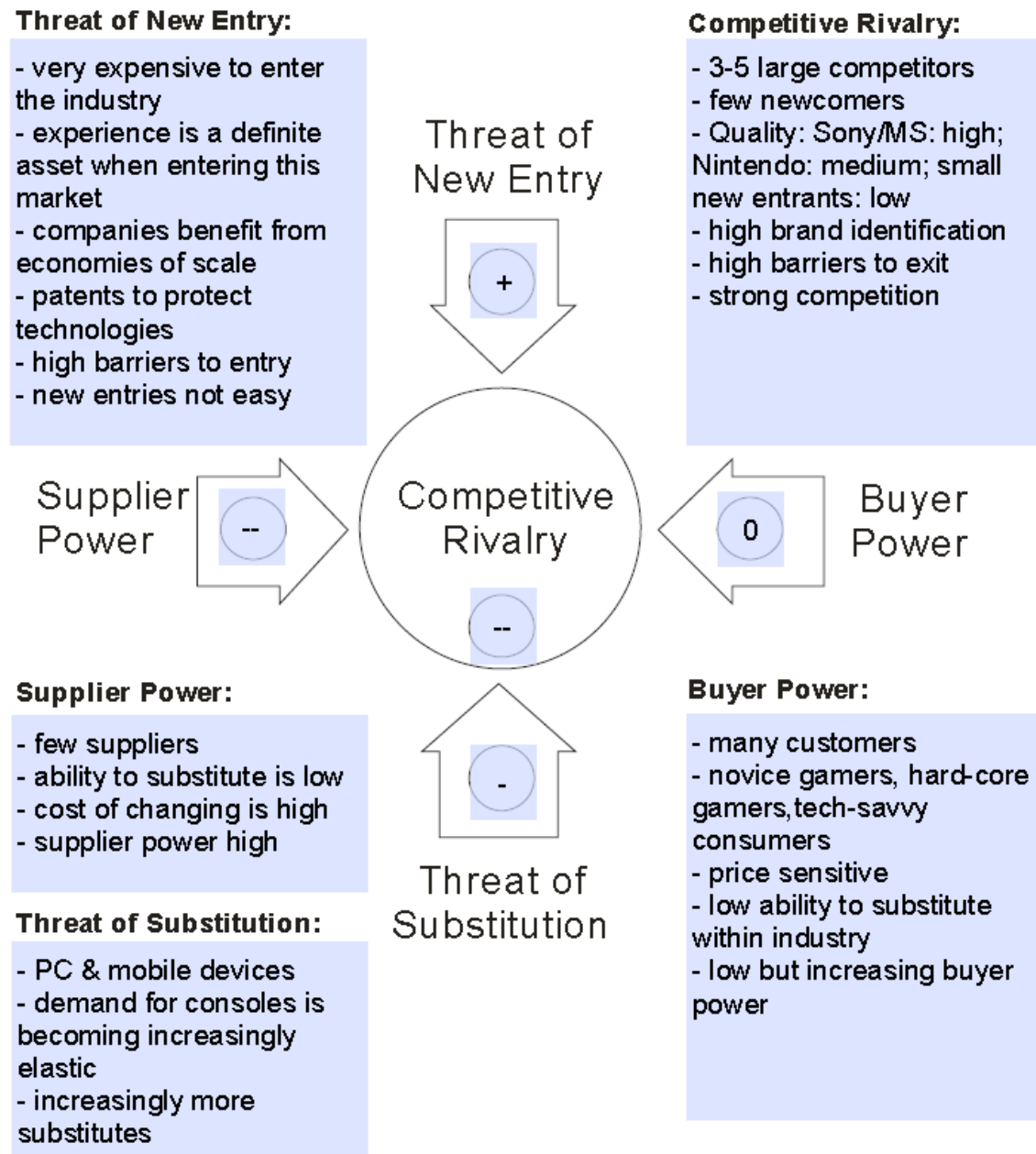
There have been seven generations of game consoles. Each generation brought improvements to technology and gameplay. The seventh generation has been the longest lived and has been extremely revolutionary. This generation increased the popularity for downloadable games; the Wii introduced motion sensor gameplay; and the PS3 included a Blu-Ray player introducing the concept of the console as an entertainment unit and not just for gaming. Currently, the seventh generation lifecycle is ending and a new eighth generation is beginning. In this new generation of consoles, manufactures will include further technological improvements along with new competitors and a new business model.

The video game industry is huge and a cyclical one. New products enter the market; a handful of successful ones stay but eventually overall sales decline and a new set of products enter the market. The industry is also a two-sided market. Therefore, it is important that console producers implement strategies that capture market share early on to build a broad user base.

## **5: Game Console Industry Analysis**

This chapter is an analysis of the current video game industry based on the information presented in the previous chapter. The analysis uses Michael Porter's "Five Forces" framework to measure the attractiveness of the market. The framework highlights where the power lies in an industry. V7 can leverage this information to their advantage by minimizing the impacts of the identified threats through their strategy. The categories of the possible threats are: (1) Competitive Rivalry, (2) Threat of New Entry, (3) Threat of Substitutes, (4) Bargaining Power of Suppliers and (5) Bargaining Power of Customers. Due to the numerous complementary products in the game console industry, the analysis will investigate an additional dimension relating to the effects of complementary products. Finally, the analysis will conclude with a brief discussion on the effects of government regulations on the console industry using the illegalization of video game consoles in China as an example. Figure 5.1 illustrates the summary of the five forces that effect the video game console industry.

Figure 5.1 Summary of the Competitive Forces of the Game Console Industry.



Source: author, template adapted from mindtools.com website. 2013, retrieved on June 20, 2013 from <http://www.mindtools.com/pages/article/worksheets/PortersFiveForcesWorksheet.pdf>

## 5.1 Intense Rivalry between Giants

Competition is strong in the game console industry. As mentioned in Chapter 4, the major competition in the eighth generation of consoles consists of the three leaders of the preceding generation (Nintendo, Microsoft and Sony), the possibilities of Apple and Google as well as a few new smaller players. Although there are only a handful of competitors in this market, three of them are seasoned giants who have great brand reputation and an abundance of resources to stay in the market for a long time. If Apple and Google enter the market, the competition will become even fiercer. These mega firms have the resources to control much of their production components and have the ability to receive benefits of vertical integration if they choose. Moreover, consumers know that these large companies will not exit the market easily and therefore consumers stand to benefit from long-term support and a continuous supply of games for their consoles.

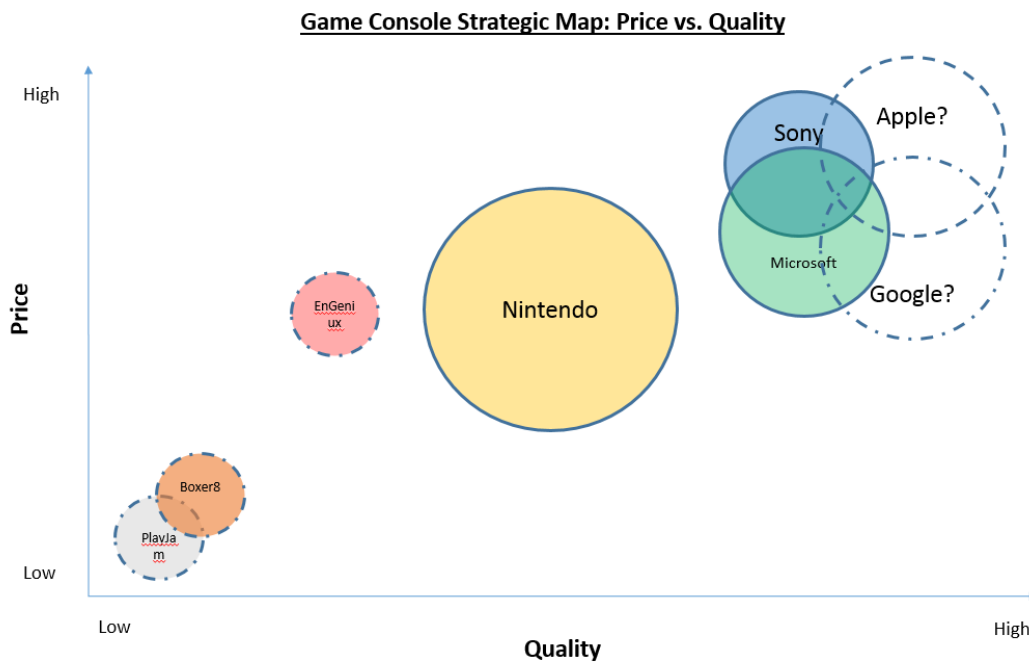
The seventh generation console era has been the longest lived. Consumers have for a long period, invested not just in a console but also the games for them. Many popular games are exclusive to a particular console. Consumers that have invested countless hours playing a game will find it difficult switching to consoles that are not compatible with their game. For example, Halo is a very popular game that is only available to Microsoft. Loyal Halo fans will not see the benefit of switching consoles because that will prevent them from playing future versions of this game.

Sony's PS3 and Microsoft's Xbox 360 have superior graphics and gameplay and there is an assumption that their eighth generation consoles will continue to meet these high standards. Nintendo has a reputation for reliable hardware, and minimal software crashes and has improved the quality of its graphics for the Wii U. Apple and Google

have reputations for quality products and consumers will expect high quality if either produce consoles. The smaller companies do not have the resources to compete in quality. However, they all have unique features that could help them attract niche markets.

Figure 5.2 shows a diagram of price versus quality of current, future and possible competitors. The size of the circles represent the competitors' current or possible market share. The graph shows that the areas with the least competition are pricing high with low quality or pricing low with medium to high quality. It is obvious that no consumer would be willing to pay a premium for substandard quality, so pricing low while delivering medium to high quality would be optimal to avoid competition.

Figure 5.2 Price vs. Quality Strategies of Current and Future Game Console Firms



Source: author

With the three giant firms that dominate the market and rumours of Apple and Google entering the market, it will be very difficult for V7 to compete without something



that will give them strong competitive advantage. Even lower price points and targeting niche markets could be a challenge now that smaller newcomers such as Boxer8, PlayJam and EnGeniux will soon be entering the market. As described in Section 4.6, once consumers decide on their purchase, both direct and indirect network effects take place, making it more difficult for less dominant firms to compete. Creating more interest in their product early in its lifecycle will help V7 succeed in this highly competitive industry.

## **5.2 New Entrants Don't Stand a Chance**

The console industry is not an easy one to enter. It requires a large investment, specialized expertise and strategic timing. Barriers to entry are high in this market.

The game console industry has large set up costs. Many costs associated with research and development as well as manufacturing and marketing is required. A game console has many hardware components and software requirements that require a significant investment to develop, integrate and bring to market. After the console enters the market, production costs will remain high until the company can benefit from economies of scale. Once companies achieve economies of scale, they can pass some of their savings to their customers through lower prices, which could lead to a natural oligopoly with a few large dominant firms and possibly one smaller niche firm (Gehrig, 1993). New entrants will then find it very difficult to compete with these companies.

Even with an abundance of financing, entering the market requires specialized technical knowledge. Specific hardware and software technologies are required for creating a console. Every company must protect their assets, from software to hardware

components and even the design of the case. Patents further increase barriers to entry by making it difficult for companies to use or copy important technologies and designs.

The timing of entry is very important in the game console industry. Consumer switching costs are lower during the early stages of a generation because they have not invested heavily in the console or games. However, once the early adopters have led the mass majority to believe that the early adopters' choices are the best ones, the dominant players will begin to emerge. More and more consumers will make their purchasing decision based on direct network effects. Furthermore, as mentioned in the previous chapter, as more people purchase particular consoles, more developers will create games and other complementary products for those consoles, which will lead to increased demand for them. Both direct and indirect network effects increase the power of the competition as well as create huge barriers for new entrants. Eventually, only a few dominant consoles remain with a huge library of games and wealth of complementary products making it impossible for any newcomers to enter the market.

Game developers are unlikely to start creating games for new consoles because many of them develop games exclusively for particular consoles. For example, V7's development team has expertise in creating games for the Xbox 360. Thus, it is difficult to have them develop for another console without additional resources and knowledge of the other system. However, the transition to developing for a new console decreases during the early stage of a generation because developers need to learn new technologies for the new generation consoles anyways. Once the developers have learned the new technologies and the company has made their decision to develop for a particular console, it will be difficult for new entries to enter the market because there will not be many

developers with the skills or interest to develop games that support their consoles. The decision as to which console a developer will create games for rely heavily on the demand from consumers which is provoked greatly by network effects as we have discussed above.

The three major players create high barriers to entry into the market because they have the resources to compete, many patents for their technologies and established brand reputation that consumers trust. Costs of entering the market and producing consoles are high. It is easy for the current large companies to mass produce and benefit from economies of scale. In addition to barriers created by the competition, network effects also create barriers to entry. The higher the demand is for a particular console, the more games developers will produced for it, thus further increasing its value and demand. Moreover, developers who are accustomed to developing for a particular console will not easily convert to creating games for a new entrant that has not proven its ability to reach a large audience. Therefore, the threat of new entries into the console industry is low. This is bad news for V7 as a new entrant. However, if V7 can successfully enter the market, they can rest assure that there will not be many new entrants to worry about moving forward.

### **5.3 Improved Technology is Increasing the Threat of Substitutes**

The threat of substitutes is definitely increasing for the console industry. There are two apparent substitutes to console gaming: Personal Computer (PC) gaming and mobile gaming. Both of these gaming platforms offer cheaper gaming alternatives. Switching costs are low because most consumers will already have these devices in their homes.

There has been a lot of debate on whether PC gaming will overtake console gaming and vice versa. The decline in the popularity of multiplayer online PC games was thought to be the end of PC gaming. However, a study showed that in 2012, PC gaming actually grew 8% with \$20 billion worth of revenues (Evangelho, 2013). This finding shows that PC gaming is still a strong threat to the console market.

Graphics on mobile devices do not match the quality of graphics that consoles can deliver. However, technological advancements are improving the quality of gaming on these devices and the lower costs of gaming on mobile devices offsets the lack of quality. This popularity of mobile games have been significantly increasing in recent years. A study showed that 60% of tablet owners play games 67% of the time they are using their device (Chou, 2013). Moreover, users can take their mobile devices with them anywhere, whereas console usage is usually restricted to the indoors. Therefore, mobile users are able to engage their devices more often. With the increasing popularity of mobile devices and the continuous technological improvements that narrow the gap in quality of graphics and game play the threat of this substitute to game consoles is very strong.

#### **5.4 Customer Bargaining Power is Low but Increasing**

There is a broad audience in the game console industry. The customers vary in age, gender, gaming knowledge and preferences, and they are price-sensitive. They may purchase more than one brand of console but will typically purchase only one console of a particular brand per household. Customers currently have weak buying power because the number of suppliers within the industry is low and once the customer has invested in a particular console their switching costs increases.

The large number of customers in the market relative to the number of suppliers explains the weak buyer power in the industry. Although customers prefer lower prices, they do not have many options that they can turn to. Consumers, looking for a high-end, high-quality graphics and gameplay only have the Xbox 360 or PlayStation 3 as options. Those looking for a casual, less graphics intense gameplay at a more affordable price only have the Wii as an option. There is also absolutely no chance of backwards integration because of the complexity of the product. Therefore, it is unlikely that customers will have power to drive down prices.

Games and accessories for a console is not compatible with other consoles so once a consumer invests a lot in a console through game and peripheral purchases, their switching costs become high. The switching cost intensifies even more if consumers participate in online gaming. It takes time for an online community to grow through network effects. It will be difficult for a player to switch to another console if they have already joined a strong online community with their current console. The high switching costs associated with changing consoles lowers the buying power of consumers.

Although the buying power of consumers is low in the current game console market, the market is evolving. Increasing gaming options outside the traditional game console industry such as games on mobile devices and personal computers are increasing the threat of customer buying power. The increasing popularity of mobile devices and their improving gaming capabilities is giving consumers more device options and thus increasing the number of substitutes. The gap between different forms of digital entertainment media is narrowing. Gaming consoles can act as movie players, television boxes and computers. It is then possible for the television and computer companies to

move into the game console market to compete. Increasing substitutes and competition will increase the buying power of customers.

## **5.5 Bargaining Power of Suppliers are High**

There are limited suppliers that manufacture parts specific to consoles. The suppliers need to be large in order to keep up with the demand of the consoles. Each brand of consoles have customized parts specific to their system. Console companies build strong relationships with their suppliers to ensure the highest quality and timeliness of delivery of parts for their consoles. If their supplier cannot meet their demand or quality expectations, it will take time to build a new relationship with a new supplier. The transition could hinder production of consoles and the reputation of the brand if it is not smooth. Therefore, the bargaining power of suppliers is high in the game console industry.

For V7, their differentiating technology relies heavily on FPGA chips. Two major suppliers of the chips occupy 80% of the market (Johnson, 2011). If V7 ever enters a situation where they and their FPGA supplier have a compromised relationship, V7 only has one other large supplier to turn to. The second supplier would then have even more bargaining power at that point.

There is also the threat of forward integration with suppliers in the game console industry. The suppliers have the materials, tools and expertise to build the parts and can potentially build their own console. For the large corporations that have brand recognition this is not an issue but for unknown companies like V7 this will be a great concern. However, contracts and patents will reduce this risk.

## **5.6 Purchasing the Game Console is Just the Beginning**

The game console industry relies heavily on complementary products. Without complementary products, a console has very little use. In the current market, there are many complementary products. More quality complementary products available for a particular console will increase the demand for it.

The most obvious complementary product is of course the games themselves. The larger the library of games the more attractive the console is for consumers. The quality of the games also has a strong effect on the success of the console. A quality game with a large following can greatly increase the demand for a console if the game is exclusive to that console.

In past generations when consoles only had one function, which was to execute games, the effect of not having a large library of games was detrimental to the console. However, today, especially with the eighth generation consoles marketed as entertainment systems rather than just gaming consoles, not having a large library of games may not have the same negative impact on the console's success. Other products such as movies, television shows and social media content now complement game consoles.

With such a big reliance on complementary products, console producers must build strong relationships with the suppliers of their complementary products. Depending on the popularity of the complementary product, producers can have a lot of bargaining power over console producers. To reduce some of this power, console producers can backward integrate complementary products into their value chain. However, this is not easy and it is impossible to successfully and efficiently backward integrate all the

complementary products into one business. Therefore, complementary products will always have a strong effect on the console industry.

## **5.7 Government Intervention has Low Effects**

In China, console-based gaming has been illegal since June 2000. The purpose of illegalizing console games was to protect its citizens from the negative effects of game addiction. However, the government does not strongly enforce the ban. Therefore, Chinese consumers are still able to purchase consoles easily through the grey market (Hoppe, 2013). This law also did not include PC games and as a result, PC gaming has flourished in popularity China. Recent news that the Chinese government will be lifting the thirteen-year ban has the console manufacturers anticipating a surge in sales in the newly opened market.

Government regulations do not strongly affect the game console industry in most of the world. In China, their ban has given the PC gaming market the bulk of the gaming market share. However, even with China's illegalization of consoles, Chinese consumers are still able to find ways to purchase systems, which further shows the minimal effect that government policies have on the console industry.

## **5.8 Summary**

The above analysis has shown that threats are high in the console industry. Table 5.1 shows a summary of the results of the analysis. Competition, bargaining power of suppliers and complementary products are great. Threat of substitutes and bargaining power of customers are increasing. The market is a very difficult one to enter, and due to new technological trends, there has been much discussion on whether the industry itself



will survive. However, the beginning of a new generation lifecycle may allow companies to enter and capture market share.

*Table 5.1 Summary of the Competitive Forces that Impact Firms in the Game Console Industry*

<b>Forces</b>	<b>Intensity of Threat</b>
Competitive Rivalry	High
Threat of New Entry	Low
Threat of Substitutes	Medium - High
Bargaining Power of Suppliers	High
Bargaining Power of Customers	Low - Medium
Effects of Complementary Products	High
Effects of Government Regulations	Low

*Source: author*

## 6: A Systematic Look at V7's Strengths and Weaknesses

This chapter is an internal analysis of V7 that uses the four stages of internal analysis from the paper, "Competitive Advantage and Internal Organizational Assessment" by Duncan, Ginter and Swayne (1998). The four stages of the analysis are: (Stage 1) surveying potential strengths and weaknesses, (Stage 2) categorizing organizational differences, (Stage 3) investigating the source of competitive advantage and (Stage 4) evaluating competitive advantage. The base of this analysis uses a value chain model that identifies primary and secondary activities within V7. Stage 1 looks at each activity's strengths and weaknesses in terms of how much the activity increases or decreases V7's competitive advantage.

Stage 2 analyses the strengths and weaknesses identified in Stage 1, in terms of competitive advantage relative to V7's competitors. This stage uses an assessment of internal factors for strategic advantage (ASSIST) analysis. The ASSIST analysis goes through each strength and weakness and categorizes them as either a resource or capability. The next step in the analysis is answering a set of questions for each strength and weakness. Does the resource or capability give value to the customer? How rare is the resource or capability? How easily is it for others to imitate the resource or capability? How well can the firm/competitor sustain their resource or capability? The final step is evaluating the extent to which each strength or weakness meets the answers. Table 6.1 shows possible choices for evaluating the extent:

Table 6.1 Choices for Evaluation of the Extent of Strength or Weakness of ASSIST analysis.

Extent of Strength/Weakness	Description
Inadequate	Below minimum required to be in the business

Adequate	Minimum required to be in the business.
(Un)Attractive	(Not)Better than minimum required to be in the business
Potential	Sufficient in attracting attention and considered in firm's strategy
(Un)Competitive	Clear competitive (dis)advantage
Distinctive	Cannot be duplicated by competitors

Source: author, with data from Duncan, J.W., Ginter, P.M. & Swayne, L.E. (1998). *Competitive advantage and internal organizational assessment. The Academy of Management Executive*, 12(3), 6-16

Stage 3 identifies where the source of V7's competitive advantage lies. Finally, Stage 4 looks at possible generic strategies that V7 can implement which would leverage its strengths while minimizing the effects of its weaknesses. These generic strategies are Cost Leadership, Differentiation, Cost Focus, and Differentiation Focus (Porter, 1980).

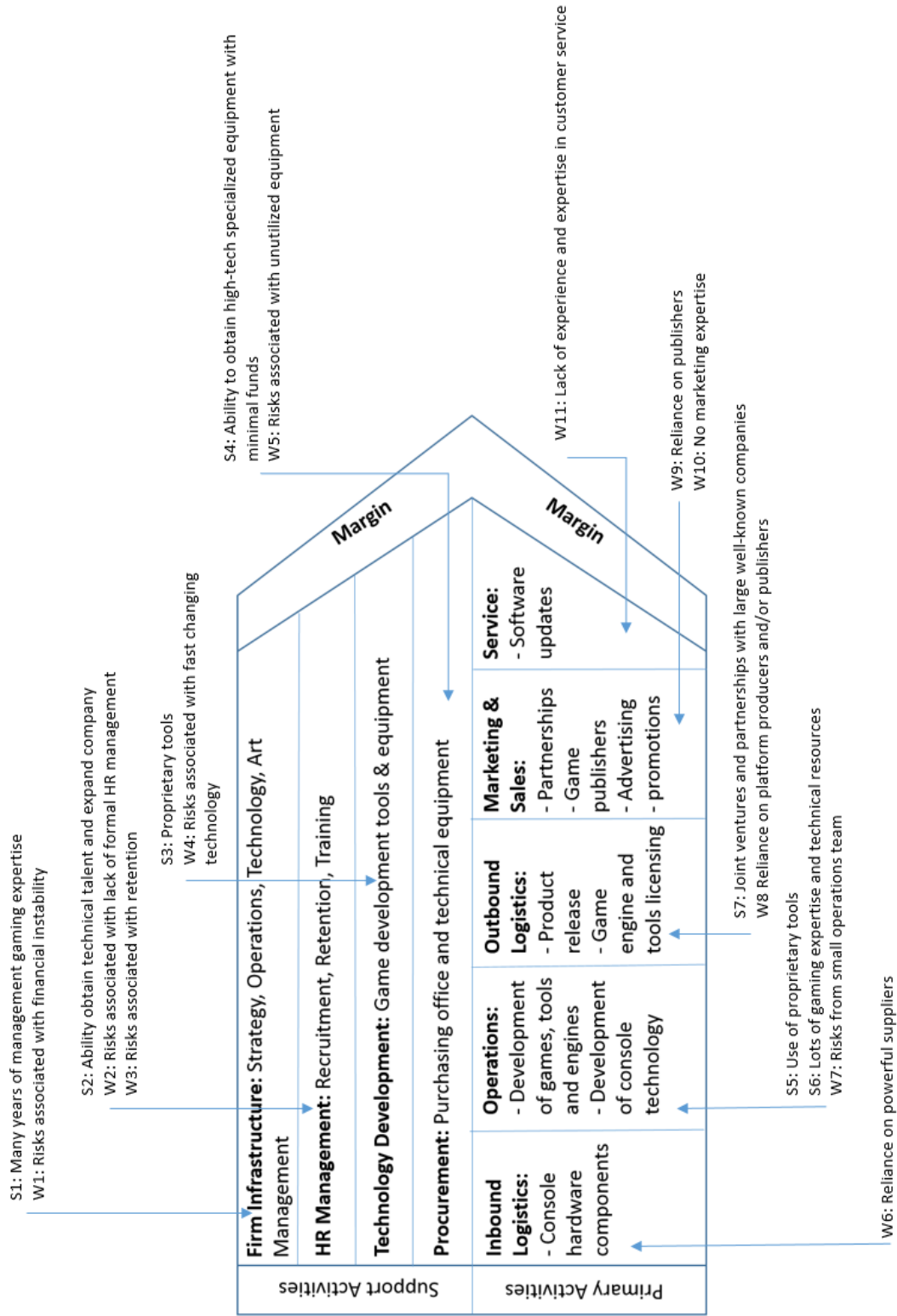
## 6.1 Stage 1: V7's Potential Strengths and Weaknesses

Figure 6.1 shows a diagram of V7's value chain along with identified strengths and weaknesses of support and primary activities. V7's strengths include strong technical assets both tangible and intangible. Creating games for the Xbox 360 requires the company to use very specialized high-tech equipment suitable for creating AAA quality games. They have also developed their own proprietary tools and equipment under their V7 Labs portfolio that help them develop games more efficiently. They have staff that possess very specialized technical expertise. As mentioned in Chapter 2, all of V7's original founders met in the MDM program at the Centre for Digital Media, giving them all a strong foundation of multimedia expertise. A downside to their abundance of technical skills is that they now lack business expertise such as sales and marketing to bring their technologies successfully to market.

Their weaknesses include their financial instability and lack of business expertise from management. Like many start-ups, their main challenge is obtaining funding for

operations. Their lack of business expertise enhances this obstacle. With the exception of Alan Cornford, V7's Strategic Director, the rest of the management team have technical backgrounds and minimal business backgrounds. Another identified weakness is that V7 relies heavily on third parties for supplies, licensing and release management. V7 relies on publishers to create physical games, package them and then market them. In return, V7 shares the revenues with the publisher. However, this is common in the game development industry where most small development companies cannot afford to publish their own titles. V7's ability to build these partnerships adds to the strengths of the company.

Figure 6.1 Strengths and Weaknesses Related to Primary and Support Activities in V7's Value Chain



Source: author

## 6.2 Stage 2: Categorizing V7’s Organizational Difference

Table 6.2 shows the ASSIST analysis for V7. Significant competitive advantages are resources or capabilities with “Competitive” and “Distinctive” ratings. Significant competitive disadvantages have “Inadequate” and “Uncompetitive” ratings. The analysis reveals that the relevant competitive advantages/disadvantages for V7 are S3: Proprietary Tools, S6: Lots of gaming expertise and technical resources, S7: Joint ventures and partnerships with large well-known companies, W1: Risks associated with financial instability, W10: No marketing expertise, W11: Lack of experience and expertise in customer service and W3: Risks associated with retention.

Table 6.2 Assessment of Internal Factors for Strategic Advantage for V7 Entertainment

Resources	Description	Power of Strength or Weakness			
		Value	Rareness	Imitability	Sustainability
S1	Many years of management gaming expertise	Competitive	Potential	Attractive	Potential
S2	Ability obtain technical talent and expand company	Potential	Attractive	Attractive	Attractive
S3	Development of Proprietary tools	Distinctive	Competitive	Competitive	Competitive
S4	Ability to obtain high-tech specialized equipment with minimal funds	Potential	Potential	Potential	Attractive
S6	Lots of gaming expertise and technical resources	Distinctive	Potential	Competitive	Potential
S7	Joint ventures and partnerships with large well-	Distinctive	Competitive	Competitive	Potential

	known companies				
W1	Risks associated with financial instability	Inadequate	Inadequate	Uncompetitive	Uncompetitive
W2	Risks associated with lack of formal HR management	Uncompetitive	Unattractive	Unattractive	Uncompetitive
W5	Risks associated with unutilized equipment	Unattractive	Unattractive	Unattractive	Unattractive
W6	Reliance on powerful suppliers	Unattractive	Unattractive	Unattractive	Unattractive
W7	Risks from small operations team	Unattractive	Unattractive	Unattractive	Uncompetitive
W10	No marketing expertise	Inadequate	Inadequate	Inadequate	Inadequate
W11	Lack of experience and expertise in customer service	Inadequate	Inadequate	Inadequate	Inadequate
	<b>Capabilities</b>				
S5	Use of proprietary tools in Operations	Adequate	Attractive	Adequate	Potential
W3	Risks associated with retention	Inadequate	Uncompetitive	Uncompetitive	Inadequate
W4	Risks associated with fast changing technology	Unattractive	Unattractive	Unattractive	Uncompetitive
W8	Reliance on platform producers and/or publishers	Unattractive	Unattractive	Unattractive	Unattractive
W9	Reliance on publishers	Unattractive	Unattractive	Unattractive	Unattractive

Source: author

S3 is a relevant competitive advantage for V7 because proprietary tools add value to a company. Many companies do not create their own tools and tend to use tools that are readily available to everyone. The company that created the tools have sole ownership and use of the tools and therefore no other companies have access to them. This makes the tools difficult to imitate. In addition, firms having their own proprietary tools makes it easier to sustain the tools because you do not have to rely on a third party for improvements or fixes.

S6 is a relevant competitive advantage because any type of related expertise is valuable to a company. With complicated algorithms and graphics involved in video game development, technical expertise is of huge value. Although all video gaming companies have technical expertise, the level and combination of technical skills is unique to a firm. By encouraging staff to keep up with continuous training, hiring highly experienced technical professionals and continuing with innovation as well as research and development, V7 can sustain this competitive advantage.

Even as a small start-up, V7 was able to collaborate with NBC/Universal to create their upcoming XBLA game. They also have partnerships with game publishers to help them release titles. This shows that V7 has the ability to build external relationships. This strength (S7) is valuable, rare and difficult to imitate. However, strong relationships can be difficult to achieve and maintain especially if the partner has much greater bargaining power over V7.

A very relevant weakness for V7 is their financial instability (W1). Without funding, V7 cannot afford to operate. This diminishes the value of the company in the point of view of potential investors and potential skilled employees. The company has



managed to obtain enough financial resources to stay running for five years. However, without significant revenues, operations will not be sustainable.

V7 does not have true marketing or human resource expertise. W3, W10 and W11 are relevant competitive disadvantages because they involve core activities in V7's Value Chain. Although V7 can rely on publishers to market their games, they will require their own marketing if they are to enter the console market. Without proper human resource management, V7 will not be able to maintain their current talent and obtain new talent. The lack of these key value chain activities will put V7 at a disadvantage amongst their competition.

### 6.3 Stage 3: Investigating the Source of V7's Competitive Advantage

Stage 3 evaluates how the relevant competitive advantages/disadvantages identified in Stage 2 affect the firm and identifies where they affect the Value Chain.

Table 6.3 shows the Stage 3 analysis.

*Table 6.3 Strengths and Weaknesses as Potential Sources of Competitive Advantage and Disadvantage for V7 Entertainment*

<b>Strength/ Weakness</b>	<b>Description</b>	<b>Potential Source of Competitive Advantage/Disadvantage</b>	<b>Location on Modified Value Chain</b>
S1	Many years of management gaming expertise	Not Competitively Relevant (See Table 6.1)	Firm Infrastructure
S2	Ability obtain technical talent and expand company	Not Competitively Relevant (See Table 6.1)	HR Management
S3	Development of Proprietary tools helps the firm develop games more efficiently leading to time and cost savings.	Cost Driver	Technical Development
S4	Ability to obtain high-tech specialized equipment with minimal funds	Not Competitively Relevant (See Table 6.1)	Procurement
S5	Use of proprietary tools in Operations	Not Competitively Relevant (See Table 6.1)	Operations

S6	Lots of gaming expertise and technical resources helps the firm focus and specialize in their industry.	Uniqueness Driver	Operations
S7	Joint ventures and partnerships with large well-known companies gives the firm credibility and enhances their reputation.	Uniqueness Driver	Outbound Logistics
W1	Risks associated with financial instability make it difficult for firm to plan budgeting.	Cost Driver	Firm Infrastructure
W2	Risks associated with lack of formal HR management	Not Competitively Relevant (See Table 6.1)	HR Management
W3	Risks associated with retention may lead to high turnaround and increased training costs	Cost Driver	HR Management
W4	Risks associated with fast changing technology	Not Competitively Relevant (See Table 6.1)	Technical Development
W5	Risks associated with unutilized equipment	Not Competitively Relevant (See Table 6.1)	Procurement
W6	Reliance on powerful suppliers	Not Competitively Relevant (See Table 6.1)	Inbound Logistics
W7	Risks from small operations team	Not Competitively Relevant (See Table 6.1)	Operations
W8	Reliance on platform producers and/or publishers	Not Competitively Relevant (See Table 6.1)	Outbound Logistics
W9	Reliance on publishers	Not Competitively Relevant (See Table 6.1)	Marketing & Sales
W10	No marketing expertise make it difficult for firm to brand and advertise their products.	Uniqueness Driver	Marketing & Sales
W11	Lack of experience and expertise in customer service may lead to poor customer experience.	Uniqueness Driver	Service

Source: author

S3, W1 and W3 are cost drivers. The development of proprietary tools is a Technical Development activity to help V7 operate more efficiently, which helps them reduce costs. Tools such as their Hive Engine can also help bring in revenue through licencing to other developers. W1 is a Firm Infrastructure activity cost driver because it directly effects the financial situation of the firm. V7 will always have to find ways to keep costs down if they are not financially stable. W3 is a Human Resources activity that

effects costs because every time there is an employee turnover, V7 needs to train their replacements, which costs the company time and resources.

S6 and S7 are strengths that help respectively make V7's Operations and Outbound Logistic activities unique. As mentioned in the previous section, employee talent, technical expertise and the ability to build partnerships are difficult to imitate and are competitive advantages for V7 because they do these activities well. W10 and W11 are weaknesses that hinder Marketing/Sales and Service activities respectively. The activities in the primary support categories of the value chain help differentiate a company from their competitors. V7's lack of abilities in these areas are therefore competitive disadvantages that affect uniqueness.

#### **6.4 Stage 4: Evaluating V7's Competitive Advantage**

Stage 4 looks at all the relevant competitive resources and capabilities and their sources identified in Stage 3 to recommend a generic strategy for the firm. V7's relevant competitive advantages lie in technical development, operations and outbound logistics of their value chain. The competitive advantage in technical development is a cost driver. However, due to the size of the firm and its need for financing, V7 would not be able to pass savings on to their customers. The other relevant competitive advantages are uniqueness drivers. They relate to good technical research and development, specialized people assets and strong reputation in the industry. V7 should leverage these internal strengths by implementing a differentiation strategy.

Looking at V7's relevant competitive disadvantages, they have two cost drivers and two uniqueness drivers. The cost drivers reconfirm that they would not be able to use

a Cost Leadership strategy. A Cost Focus strategy would require V7 to compete in price in a niche market. This strategy will be difficult to implement without the benefits of economies of scale. However, newcomers, Boxer8 and PlayJam are attempting to use this strategy but it is unknown whether they will be successful until their releases. The uniqueness drivers relate to Marketing and Sales, and Service. These two primary activities are significant for a Differentiation strategy because a Differentiation strategy requires strong sales and marketing to communicate their quality and uniqueness to a wide range of consumers. If V7 constructs a strong marketing and sales strategy, they could successfully enter the market with a Differentiation Focus strategy that targets a niche market. Considering their strengths in innovation and technology, and that building a strong marketing strategy would be more achievable than competing in price, V7 would compete better using a Differentiation Focus strategy over a Cost Focus Strategy.

## **7: Where Would V7 Fit in the Game Console Industry?**

Currently, V7 is working on the feasibility study outlined Section 2.3.1. V7 estimates this pre-prototype phase to last seven months. If the feasibility study validates the application of FPGA technology for game consoles, V7 plans to begin their prototype phase, which involves eleven months for development of the hardware and software components for the V7 Enigma. However, before V7 dives into development, they need to plan a strategy. Part of the strategic planning is for V7 to know where they fit in the game console competitive landscape. This chapter will first focus on the major threats identified in Chapter 5 (Competition, Substitutes, Supplier Power, and Complementary Products) and discuss how V7 can mitigate these threats. The second part of the chapter will focus on how V7 can leverage their relevant strengths and minimize their relevant weaknesses to help them develop a strategy for this unfamiliar hardware market. The next chapter will present strategic options for V7 to consider.

### **7.1 Fitting in By Mitigating Threats**

Many forces threaten firms in the game console industry. This section will discuss how V7 can minimize the damage from the high-risk threats identified in the external analysis in Chapter 5.

Historically, a few major players have dominated the game console market. A few small new companies are trying to enter the market in the beginning of the eighth generation. Each of these new entrants have their own differentiation strategy. V7 is hoping to be one of these new entrants with their own differentiation strategy. V7 Enigma's differentiation feature will improve the overall quality of game play for the

consumer. Because of this, V7 may be able to set a slightly higher price relative to the other small new entrants. This would position V7 closer to EnGeniux and Nintendo on the Strategic Map shown in Figure 5.2. If V7 can avoid overlapping with competitors in price and quality, they can minimize the threat from competitors. However, many of the eighth generation consoles have scheduled releases before the end of 2013, which means that by the time the V7 Enigma is released the competition may have taken up most of the market share. Furthermore, the potential of Apple and Google entering the market may overshadow any other new entrants trying to penetrate the eighth generation market.

The number of substitutes for game consoles is increasing because the gap between the quality of games on consoles, personal computers and mobile devices is shrinking. Moreover, the popularity of mobile devices and the low price points of mobile games has made mobile gaming more convenient and accessible for consumers. V7's proposed approach of increasing the quality of game play through FPGA technology and offering more games that are episodic will attempt to keep consumers interested in the game console platform.

There are only two major suppliers of FPGA chips. In general, the price of FPGA chips having been declining which should lead to an increase demand for the chips and thus more chip manufacturers entering this market. However, since FPGA chips is the key component to their technology, V7 must build a strong relationship with their FPGA supplier to ensure the supply and quality meets V7's expectations. As a small company without hardware expertise, V7's hardware component suppliers will have high bargaining power. Therefore, V7 should also build strong relationships with all of their other hardware suppliers.

Complementary products have a huge impact on game consoles. Fortunately, V7 has the software expertise to begin building a library of games to complement the V7 Enigma. With other features such as television and movie streaming, V7 will have to work in partnership with firms to deliver these complementary services. Again, due to V7's size and lack of console experience, these complementary service and product suppliers will have strong bargaining power.

## **7.2 Utilizing V7's Strengths to Minimize Their Weaknesses**

The internal analysis done on V7 revealed that their strengths are in technology, innovation and building partnerships. V7 has the technical ability to develop high quality games and software tools. They can continue to utilize this strength by developing the FPGA software technology and the games that will run using this technology. V7 can reduce the areas that require improvement by using their strength in creating partnerships. The analysis found that their weaknesses are their financial impediments and their lack of product marketing and sales expertise. Creating partnerships in hardware and support activities will alleviate resources required by V7 for developing and marketing the V7 Enigma hardware and allow V7 to concentrate on software technology development.

As mentioned in Chapter 6, due to V7's size and inability to benefit from economies of scale it would be difficult for them to implement a cost strategy. Their strength in technical and innovative expertise will allow them to differentiate the V7 Enigma from similar products. However, their lack of resources will force them to produce in smaller quantities initially until they build up a brand reputation and thus they should concentrate on a smaller niche market during entry.

### **7.3 Summary**

V7's size and lack of hardware expertise are main factors that will make it difficult for them to mitigate game console industry threats. With the eighth generation already begun with the release of the Wii U and the release announcements from Sony, Microsoft and three new entrants, V7 may have missed their window of opportunity to enter the market. Their strengths in software technology and innovation will still help them build a valuable product. They can be successful if they leverage their ability of creating partnerships by collaborating with firms who can assist V7 with areas in which they lack expertise and resourcing.

The internal analysis of V7 Entertainment uncovered V7's relevant strengths and weaknesses. V7's strengths focuses on technology and innovation and intangible assets such as their knowledge, expertise and partnerships. Their weaknesses lie in their financial impediments and their lack of product marketing and sales expertise. By utilizing their internal strengths and considering their internal weaknesses, employing a Differentiation Focus strategy would be optimal for the firm.



## **8: What are V7's Options?**

This chapter will present four options that V7 can consider as their strategy for the V7 Enigma console project. The four strategic options are (Option A) complete the prototype and bring the completed system to market, (Options B) develop the technology and collaborate with an OEM to bring the system to market, (Option C) develop the technology and license the technology to other companies and (Option D) do not pursue the technology any further. In order for these options to be viable two events must occur. The first event that must occur is that the feasibility study returned positive results (i.e. the conceptual console using Dr Ishebabi's FPGA technology and V7's gaming engine is technically possible). The second event that must occur is that once V7 has completed the incorporation of the FPGA technology within a game console platform, they along with Dr Ishebabi, will apply for a new patent that will include both parties as the owners.

The options will also consider a list of pros and cons, as well as worst, average and best-case scenarios for each option. The worst-case scenario is the situation where V7 stands to lose the most because of choosing the option. The average-case scenario is the situation where V7 is neither extremely better nor extremely worse off due to choosing the option. The best-case scenario is the situation where everything goes as planned and V7 gains the maximum benefits possible from choosing the option. The information gathered from previous chapters will be the reasoning behind why a particular scenario is most likely to occur for a particular option. The final chapter will then suggest the optimal option for V7 Entertainment.

## **8.1 Option A – Take the Completed System to Market**

In Option A, V7 will continue with their research and development and create the V7 Enigma prototype. With a working prototype, they will ideally be able to obtain further funding to create a completed marketable product that they can bring to the market. They will construct the unit by purchasing the hardware components and assemble the part by themselves or by hiring third parties. All intellectual property will belong to V7. To implement this option, they will first need to find financing in accordance to their projected prototype funding requirements (Table 3.1 & Table 3.2) and expand the requirements to include production costs. They will require a business plan detailing how they intend to take their technology to market and the returns they expect. They will need to look for suppliers and build the marketing team that they currently lack.

From the internal analysis done in Chapter 6, we have concluded that V7 should use a differentiation focus strategy. The key factor that will make the V7 Enigma different from all the other consoles is its FPGA technology. This technology, which allows developers to utilize all the resources available on the console, will result in better gameplay for the consumer. There are infinite possible niche markets that V7 may target. Industry research done in Chapter 4, shows that the female market is growing as well as emerging markets using the PAL standards. The Indie market is one that V7 is already familiar with and could be a possibility.

Although V7 should not implement a full pricing strategy to compete in the market, they will still need to set a price for the V7 Enigma that is strategically beneficial for them to enter the market. As the industry analysis performed in Chapter 5 showed, it

is difficult for new entrants to enter the market and competition is very strong in this industry. If V7 were able to target a niche market with a pricing strategy that does not overlap with their competitors', this would increase their chances of successfully penetrating the market.

The benefits of this option is that V7 is able to oversee and control every aspect of the V7 Enigma development, production and release. They will also be the sole beneficiary of the rewards if the console is successful. However, this option is difficult to execute and complete. The amount of resources required is substantial and if the project is unsuccessful, V7 will have to bare all of the losses.

The worst-case scenario if V7 chooses this option is that they invest a lot of time and resources into the V7 console and the console is a huge failure. Game developers do not adopt the technology and there is no interest in the consumer market for the console. V7 will then be unable to recover their investment, which will lead to the company terminating their operations. The average-case scenario is that the V7 Enigma enters the console market and consumers purchase enough units such that V7 breaks even. The company produces enough games to sustain interest in the console however; the combined sales do not generate profit. The best-case scenario is that the V7 Enigma goes to market and their niche target market quickly adopts the console. Then other developers see the consumer interest and the benefits of the technology and develops more games for the V7 Enigma. With the profits generated from the niche market, V7 can then afford to broaden their target audience and capture more of the market.

The most likely case that will result from choosing Option A for V7 is the worst-case. The main reason is that the industry is not favourable towards new entrants. As

mentioned, the barriers to entry are very high in the game console industry especially for small, unknown newcomers. If Apple and Google joins the competition, it will make it nearly impossible for small companies to enter.

There is a window of opportunity during the beginning stage of a new generation for new entrants to make their attempt at capturing consumers looking for the next new console technology. However, being only in the pre-prototype phase of development, V7 seems to be too far behind. Similar companies like Boxer8 and PlayJam already have prototypes and have been accepting pre-orders. Furthermore, their vision of their app store for downloading games for the V7 Enigma is not new technology. All of the eighth generation consoles deliver their content through some sort of online app store. Providing episodic games through enigma is a great business strategy however, it does not give them any competitive advantage since any company can imitate this model. Choosing Option A will most likely lead to huge losses for V7.

## **8.2 Option B – Partner with an OEM**

Considering all the resources and set up costs associated with developing and bringing a full console to market, V7 may want to collaborate with another firm to help them with unfamiliar aspects of the system. Since V7 has mainly focused on video games and game engines, it would be beneficial for them to team up with a hardware expert that can help them with hardware details.

In Option B, V7 will develop the FPGA technology, build the game development platform, build the customer game library portal and work in partnership up with an Original Equipment Manufacturer (OEM) to build the hardware and bring the V7 Enigma

console to market. This option utilizes V7's strengths revealed through the internal analysis in Chapter 6, which were game expertise, innovation and building partnerships. The OEM will handle the hardware components, of which V7 has no experience producing.

The integration of television is a popular trend in the eighth generation consoles. Therefore, television manufacturers and cable box manufacturers would be strong allies. Incorporating the FPGA gaming technology into devices that already exist in consumer homes such as smart televisions and personal video recorders (PVRs), will make it easier for V7 to achieve presence in the market. The partnership will also benefit the OEMs by giving them a competitive advantage over their competitors with the additional feature of offering high quality video games built into their devices. Depending on the partnership, this option could allow V7 and its partner to use a broad scope, differentiation strategy.

The benefits of Option B are that V7 can focus on their expertise, share the risks and borrow resources from their partners. The downside of this option is that V7 loses their full control of the product and this option requires them to share the profits. Large OEMs will also have strong bargaining power and could easily get V7 to give up the majority of control of the product.

In the worst-case scenario, V7 chooses the wrong partner. The reasons that the partnership is not a good fit for V7 could be many, for example, their vision for the V7 Enigma or company values do not align, the partner takes control of the project, the partner is unreliable, etc. A poor partnership will not produce a quality product and will lead to losses for both parties. In the average-case scenario, V7 finds a partner that can help them complete the V7 Enigma and bring it to market. The console does not create

any significant rents for either party so the partnership ends and go their separate ways. The best-case scenario puts V7 together with a great partner that will work with them to bring their vision to life and make the V7 Enigma a market success. In this scenario, the partnership does not end with the V7 Enigma. Because of their successful collaboration and excellent working dynamic, the companies will continue to work together on many future projects.

The most likely scenario to occur for Option B is the average-case scenario. One of the strengths identified in Chapter 6 is V7's ability to build good partnerships, which will help them avoid the worst-case scenario. However, since competition in the industry is so very high, the window of opportunity for new entrants is closing and large players dominate the market, the probability that V7 will be able to capture a significant market share is low. If V7 is able to collaborate with a large enough company, they may have a chance to compete. However, collaborating with a large company will likely lead them to a worst-case scenario where the partner bargains to gain most of the control and revenues. Option B will most likely not lead to much benefits for either parties.

### **8.3 Option C – License the Technology**

Chapter 5 discusses the importance of timing in regards to entering the market. Companies have a better chance of entering the market at the start of a generation because consumers are in the market for change and switching costs are during this time because they have yet invested in any games. The eighth generation has just begun. The V7 Enigma is only in its pre-prototype phase whereas most new entrants are in their prototype or production phases. It may be already too late in the game for V7 to enter the

market when the V7 Enigma is complete especially as an unknown new entrant.

However, there is still value in the technology.

Option C proposes that V7 continue the research and development of Dr Ishebabi's FPGA technology applied to the gaming platform and licencing the completed technology to console manufacturers. V7 can develop their technology using modified existing consoles as hardware for their prototype. This option requires less financing due to the removal of the hardware components and revenues would materialize faster due to the shorter development time. V7 can then concentrate on their core business of developing games. With this option, V7's generic strategy would not change. They would continue with a Differentiation Focus strategy targeting a different market. This market would be the OEMs discussed in Option B.

This option has the least risk compared to the first two options because of the smaller investment and shorter time to a marketable product. However, this option changes the product from a console to a licensable technology. Without the completed marketable console, Dr Ishebabi could view this option as falling short of their agreement and this could damage the relationship.

The worst-case scenario that could occur if V7 chooses Option C is that nobody is interested in incorporating this technology into consoles. V7 does not recover any of the resources put into the research and development of the technology and Dr Ishebabi angrily ends their relationship because V7 did not deliver a full product for him. The average-case scenario is that V7 is successful in licensing their technology to some companies so that they are able to collect revenues to recover costs. The best-case scenario would be if V7 were able to license their technology to enough companies that

have enough bargaining power over game developers to attract developers to develop for the new technology. With a solid number of consoles using the technology and a plentiful library of games developed for the technology, the FPGA technology could become a standard in the gaming industry.

The most likely of the three scenarios for Option C is the average-case scenario. One of V7's internal strengths is innovation. Utilizing this strength, V7 will be able to develop the technology into a saleable product. The technology is new and unique and therefore has value so there is likelihood that console manufacturers are willing to licence the technology for a reasonable amount. The likelihood that the technology becomes an industry standard is low simply because becoming a standard is not an easy task and it takes a very long time to achieve this type of status. Option C would most likely lead to some returns to help recover costs.

#### **8.4 Option D – Do Not Pursue V7 Enigma**

The final option for V7 is to stop their research and development of the technology and abandon the V7 Enigma project completely. This option very much depends on the level of risk V7 is willing to take. Chapter 5 analysed the industry and the results were that the competitive landscape of the gaming industry has high barriers to entry and has very large and powerful competitors. As a small start-up company whose background and experience is not on the hardware side of gaming, V7 will be taking huge risks trying to enter this market.

With Option D, V7 can focus their resources on their company's expertise, which is producing video games. V7 will have lost the time and resources that they have already



spent investigating the technology but since these are sunk costs, the decision-making should not consider this loss. V7 will however, incur the opportunity costs from potential rents that they would forgo from console sales that the V7 Enigma would bring if it were developed and successful brought to market.

The worst-case scenario of not pursuing the V7 Enigma console is that V7 forgoes the opportunity to gain better knowledge of hardware in their industry and the financial returns that could result if the console is a success and another company takes this opportunity and turns it into success. The average-case scenario is that the technology does not take off and V7 loses the initial time and investment that they have already put into the research and development of the console. The best-case scenario is that V7 utilizes their game development strength, concentrates their resources back into their game development and produces a game that is more profitable than the console technology would be able to bring.

The most likely event is the average-case. The likelihood of another company developing the console and successfully penetrating the market is low for similar reasons given for V7. Although V7 has the potential for creating a very successful game, it is difficult here to determine how well V7 will do in the game development industry because we have not conducted an analysis on the video games industry. Therefore, the most likely scenario for Option D would be that V7 would neither be worse off nor better off if they do not pursue this venture.

## 8.5 Summary

This chapter explored four possible options that V7 can choose from for their V7 Enigma project and the benefits and costs of each option. Option A follows V7's original plan of developing the console and bringing it to market. It suggests niche markets and a pricing strategy V7 could consider when entering the market. With this option, V7 takes all the risks and the risks in the game console industry are high as concluded from the industry analysis done in Chapter 5. Option B involves collaborating with a hardware manufacturer so that V7 can concentrate on developing the software technology and leave the hardware details to an expert. For this option to be successful, V7 will need to find a partner with a similar vision for the V7 Enigma and that will allow V7 the freedom and authority to make decisions regarding the development of system with minimal interference from the partner. Option C suggests that V7 only develop the software technology and then licence the technology to console manufacturers. V7 will only be responsible for support and upgrades of the technology. This option significantly reduces the time that V7 will have to wait before seeing returns from their efforts. It also reduces the risks for V7 from entering an unfamiliar and extremely competitive market. Finally, Option D suggests that V7 abandon the entire project completely. This option assumes that the risk are too high for V7 and that they should concentrate on their main business of software game development and leave hardware development to the experts.

Table 7.1 shows a summary of the worst, average, best and most likely case scenarios for each of the options presented in this chapter.

Table 7.1 *Summary of Worst, Average, Best Case Scenarios for Each Option*

Option	Case Scenario			Most Likely
	Worst	Average	Best	

<b>A</b>	The V7 Enigma is a total failure. The cost of time and resources cannot be recovered. V7 goes out of business.	The V7 Enigma receives moderate success. V7 gains back some of all of their costs. They are neither better off nor worse off from pursuing this venture.	The V7 Enigma is a huge success and V7 continues to market the console to a broader audience. They receive great benefits from the venture and expands.	<u>Worst</u>
<b>B</b>	The partnership is not a good one for a multitude of reasons. This leads to an unsuccessful product and damaged relationships.	A partnership is made and the V7 Enigma goes to market. The console and is moderately successful. The contract ends and both parties go their separate ways.	A great partnership is created. V7 has full control of the vision and direction for the V7 Enigma. The V7 Enigma is a huge success. Both parties receive great returns and future projects are planned between the partners.	<u>Average</u>
<b>C</b>	No one is interested in the technology. R&D time and resources cannot be recovered. V7 returns to focus on their game development.	V7 sells some licenses and collects revenues to cover the costs that were incurred.	V7 sells many licenses and continues to support and improve the technology. The technology becomes a standard in console development.	<u>Average</u>
<b>D</b>	The relationship with Dr Ishebabi is hindered and the partnership ends. Dr Ishebabi approaches another company that creates a console similar to the V7 Enigma and it becomes successful.	Nothing. The technology is not developed or does not take off.	V7 puts their resources back into game development and thrives through their game development business.	<u>Average</u>

Source: author

## **9: Recommendation: Stay Away From Hardware**

This chapter compares the analyses of the different options presented in the previous chapter for selecting an optimal solution for V7. From the options presented in the previous chapter, the recommendation is for V7 to choose Option C: develop and license the technology. Option C contains the least risk for V7 if they were to continue with the FPGA technology. It involves the least amount of resources, allows V7 to utilize their internal strengths, and minimizes the effect of their internal weaknesses. This option also takes away the high risks associated with competing directly in the game console industry.

In the worst-case scenarios discussed in Chapter 8, V7 loses the time and resources up until the end of the development of the technology if they choose Option C. This is minimal when compared to the worst-case losses in Options A and B and even the opportunity costs in Option D. Furthermore, V7 should not pursue Option A since the worst-case scenario would most likely occur, resulting in the most significant loss for V7.

In the average-case scenarios where V7 is significantly neither worse nor better off. V7 would invest the least amount of time and resources by choosing Option C from the three options that continue with development. Option D would have no resources spent on the V7 Enigma project but an alternative project would take its place. The alternative project could lead to better or worse results but the result is unknown and unpredictable therefore irrelevant to the decision of choosing a strategy.

In the best-case scenarios, V7 stands to receive the greatest benefits if they chose Option A. However, the probability of this event happening is very low. As we have mentioned several times throughout the analysis, timing is very important when entering

this industry. Since V7 is only in the pre-prototype phase, they may be too far behind to enter the market before barriers to entry become too high. Option A also allows V7's internal weaknesses to show. The internal analysis done in Chapter 6 revealed that V7's most apparent weaknesses are their financial stability and lack of marketing and sales expertise. Without a prototype, financing will be difficult to obtain. In the past 5 years, V7 has been able to raise \$1.655 million (Table 2.2). V7 estimates the requirements for pre-prototype and prototype phases at \$1.3 million for 18 months (Tables 3.1 & 3.2). Without any hardware expertise and a working prototype to present, it will be difficult for V7 to find investors that will have enough interest in the idea to offer financing. Supposing that V7 could find financing and brings the V7 Enigma to market, their lack of marketing and sales resources will make it difficult to attract consumers. Much of the success of the big three, seventh generation consoles was attributed to their great marketing campaigns.

Option B has potential to have great returns in its best-case scenario. However, the partner shares in these returns and depending on the partner and the contract, the amount shared could be significant. Finding the right partner and working out all the details of the contractual agreement could also take a long time. With Option C, the returns may be lower compared to Option A or Option B. However, the revenue turnover time will be much shorter with Option C, thus V7 will be able to recover their costs sooner and proceed with other projects. Again, since we do not know what alternative V7 would pursue if they choose Option D, we cannot analyse and compare its best-case scenario results with Option C.

V7 should not enter the game console market directly. The game console market is attractive for large firms with deep pockets and the ability to integrate vertically. V7 does not have the financing nor the complete set of resources to successfully create a console and take it to market. However, if V7 can prove that the technology is viable, it would be a valuable asset to many game console manufacturers.

V7 should utilize their strengths in innovation and technology by continuing with the development of the FPGA technology. They should also recognize their weaknesses in financial support and their lack of resources in marketing and sales. They can minimize the effects of these weaknesses by choosing a strategy with the least amount of required funding and marketing effort. By licensing the technology rather than pursuing the production of a full console, V7 reduces its risks substantially. Once the technology is licensed, it is up to the licensee to successfully produce and market the console to the public. In conclusion, Option C would be the optimal strategy for V7 to implement.

## Bibliography

- Afrisciences Celebrates a New PhD. (2010, April 23). Retrieved June 24, 2013 from <http://afriscience.org/node/11>
- Aguilar, M. & Wagner, K. (2013, June 13). The Surest Sign Yet That Apple TV Will Be a Gaming Console. Retrieved June 27, 2013 from <http://gizmodo.com/the-surest-sign-yet-that-apple-tv-will-be-a-gaming-cons-513191654>
- Albanesius, C. (2010, December 10). NPD: Kinect Helps Boost Microsoft Xbox 360 November Sales. Retrieved June 18, 2013 from <http://www.pcmag.com/article2/0,2817,2374154,00.asp>
- Altizer, R. (n.d.). PLAYSTATION 3 (PS3) Revealed Before E3. Retrieved June 5, 2013 from <http://playstation.about.com/od/ps3/a/PS3SpecsDetails.htm>
- Battle of the Boxes. (2013, May 25). Retrieved May 25, 2013 from <http://www.economist.com/news/business/21578427-microsofts-newest-games-console-has-entire-living-room-its-sights-battle-boxes>
- Bishop, T. (2012, February 3). Xbox 360 tops Wii and PS3 for 1st time in yearly global sales. Retrieved June 18, 2013 from <http://www.geekwire.com/2012/xbox-360-tops-wii-ps3-1st-time-yearly-global-sales/>
- Bishop, T. (2013, May 17). Microsoft: Global video-game market hits \$65 billion, and consoles still lead the way. Retrieved May 26, 2013 from <http://www.geekwire.com/2013/microsoft-global-videogame-market-hits-65-billion-consoles-lead/>
- Boardman, A.E., Shapiro, D.M. & Vining, A.R. (2004). A Framework for Comprehensive Strategic Analysis. *Journal of Strategic Management Education*, 1(2).
- Bolton, S. (2013, May 24). Is end here for video game console? Retrieved May 26, 2013 from <http://www.brantfordexpositor.ca/2013/05/24/is-end-here-for-video-game-console>
- Campbell, C. (2013, May 3). Could Next-Gen Consoles Cost \$99? Retrieved June 27, 2013 from <http://ca.ign.com/articles/2012/05/03/could-next-gen-consoles-cost-99>
- Casamassina, M. & Sanders, K. (2006, September 13). US Wii Price, Launch Date Revealed The news we've all been waiting for. Retrieved June 2, 2013 from <http://ca.ign.com/articles/2006/09/14/us-wii-price-launch-date-revealed>
- Cifaldi, F. (2013, March 11). Could a 'pilot program' for episodic games actually work? Retrieved May 25, 2013 from [http://www.gamasutra.com/view/news/188263/Could\\_a\\_pilot\\_program\\_for\\_episodic\\_games\\_actually\\_work.php](http://www.gamasutra.com/view/news/188263/Could_a_pilot_program_for_episodic_games_actually_work.php)
- Chou, K. (2013, January 31). Mobile Kills the Console But Advances the Gaming Industry. Retrieved June 22, 2013 from <http://www.wired.com/opinion/2013/01/how-mobile-kills-the-console-but-advances-the-gaming-industry/>
- Collins, C. (2008, April). MOT Projects – General Guidelines.

- Common marketing strategies used in the games console industry. (n.d.). Retrieved July 1, 2013 from <http://www.learnmarketing.net/marketingstrategiesinthegamesconsoleindustry.htm>
- D'Angelo, W. (2012, October 25). Nintendo: Wii U 'will be Sold Below Cost,' 5.5M Wii U to be Shipped. Retrieved May 27, 2013 from <http://www.vgchartz.com/article/250503/nintendo-wii-u-will-be-sold-below-cost-55m-wii-u-to-be-shipped/>
- D'Angelo, W. (2012, December 23). 2012 Year on Year Sales and Market Share Update to December 15th. Retrieved June 2, 2013 from <http://www.vgchartz.com/article/250636/2012-year-on-year-sales-and-market-share-update-to-december-15th/>
- De Krester, O. (2013, February 7). The Walking Dead & Why Episodic Gaming is the Future. Retrieved May 25, 2013 from <http://sabotaetimes.com/camouflage/halo-4s-spartan-ops-why-episodic-gaming-is-the-future/>
- Dipl.-Ing. Harold Ishebabi. (2009, March 3). Retrieved June 24, 2013 from <http://www.cs.uni-potsdam.de/techinf/staff/ishebabi/ishebabi.en.html>
- Discover. (n.d.). Retrieved June 19, 2013 from <http://www.ouya.tv/discover/>
- Duncan, J.W., Ginter, P.M. & Swayne, L.E. (1998). Competitive advantage and internal organizational assessment. *The Academy of Management Executive*, 12(3), 6-16.
- Efrati, A. (2013, June 28). Google Building Android Game Console. Retrieved June 27, 2013 from <http://online.wsj.com/article/SB10001424127887323689204578571992848684764.html>
- Essential Facts About the Computer and Video Game Industry. (2012). Retrieved May 26, 2013 from [http://www.theesa.com/facts/pdfs/ESA\\_EF\\_2012.pdf](http://www.theesa.com/facts/pdfs/ESA_EF_2012.pdf)
- Evangelho, J. (2013, March 28). Despite Mobile And Console Competition, PC Gaming Industry Rakes In \$20 Billion During 2012. Retrieved June 22, 2013 from <http://www.forbes.com/sites/jasonevangelho/2013/03/28/despite-mobile-and-console-competition-pc-gaming-industry-rakes-in-20-billion-during-2012/>
- FPGA Fundamentals. (2012, May 3). Retrieved May 20, 2013 from <http://www.ni.com/white-paper/6983/en>
- FPGAs. (n.d.). Retrieved May 20, 2013 from <http://www.altera.com/products/fpga.html>
- Gallaugher, J. (2004). A Model for Examining Standards Competition in Two-Sided Markets Subject to Network Externalities: The Case of the Console Video Game Industry. *AMCIS 2004 Proceedings*. Paper 56
- Games retail taps new growth opportunities. (2010, April 15). Retrieved July 1, 2013 from <http://www.mcvuk.com/press-releases/read/games-retail-taps-new-growth-opportunities/070595>
- Gehrig, T. (1993). Natural Oligopoly in Intermediated Markets. *Journal of Economic. Discussion Paper No. 1027*.
- Greenwald, W. (2013, June 10). Xbox One Coming in November for \$499. Retrieved June 19, 2013 from <http://www.pcmag.com/article2/0,2817,2420201,00.asp>



- Hoppe, D. (2013, April 25). China's ban on video game consoles may end. Retrieved June 22, 2013 from [http://gammalaw.com/blog/2013/04/25/chinas-ban-on-video-game-consoles-may-end/#\\_ftnref1](http://gammalaw.com/blog/2013/04/25/chinas-ban-on-video-game-consoles-may-end/#_ftnref1)
- History of Wii. (2013). Retrieved June 2, 2013 from <http://lifestyle.iloveindia.com/lounge/history-of-wii-7802.html>
- IEEE Mission & Vision. (n.d.). Retrieved June 24, 2013 from [https://www.ieee.org/about/vision\\_mission.html](https://www.ieee.org/about/vision_mission.html)
- Johnson, J. (2011, July 15). List and comparison of FPGA companies. Retrieved June 20, 2013 from <http://www.fpgadeveloper.com/2011/07/list-and-comparison-of-fpga-companies.html>
- Kanellos, M. (2006, May 9). PLAYSTATION 3 (PS3) Revealed Before E3. Retrieved June 15, 2013 from [http://news.cnet.com/Blu-ray-a-player-in-PlayStation-pricing/2100-1043\\_3-6070342.htm](http://news.cnet.com/Blu-ray-a-player-in-PlayStation-pricing/2100-1043_3-6070342.htm)
- Krishna. (2011, June 6). Why is the Nintendo Wii So Popular? Retrieved June 5, 2013 from <http://www.k3gaming.com/nintendo-wii/>
- Mazurowski, D.A. (2005, April 1). History - Video Game Crash of 1983. Retrieved June 25, 2013 from <http://www.videogameconsolelibrary.com/art-crash.htm>
- Microsoft Exec Says Xbox 360's Success Came Off of Sony's Failures. (2012, May 14). Retrieved June 18, 2013 from <http://www.complexmag.ca/video-games/2012/05/microsoft-exec-says-xbox-success-came-off-of-sonys-failures>
- Miller, M. (2005, April 1). A History of Home Video Game Consoles. Retrieved June 25, 2013 from <http://www.informit.com/articles/article.aspx?p=378141>
- Nowak, P. (2013, May 21). Microsoft's Xbox revamp: Is the sun setting on game consoles? Retrieved May 26, 2013 from <http://www.cbc.ca/news/technology/story/2013/05/17/f-video-game-console-analysis-nowak.html>
- Octopart Search for FPGA. Retrieved July 12, 2013 <http://octopart.com/partsearch#search/requestData&q=fpga&start=990>
- Patents by Inventor Harold Ishebabi. (n.d.). Retrieved June 24, 2013 from <http://patents.justia.com/inventor/harold-ishebabi>
- Perry, D.C. (2005, September 14). TGS 2005: Xbox 360 Launch Date -The information you've been waiting for. Retrieved June 16, 2013 from <http://ca.ign.com/articles/2005/09/15/tgs-2005-xbox-360-launch-date>
- Playstation3 Search Results. (n.d.). Retrieved June 5, 2013 from <http://www.ebgames.ca/browse/playstation-3/systems?nav=2b12,28-xu0,1391-6f>
- Poh, M. (n.d.). Evolution of Home Video Game Consoles: 1967-2011. Retrieved May 25, 2013 from <http://www.hongkiat.com/blog/evolution-of-home-video-game-consoles-1967-2011/>
- Porter, M. E. (1979). How Competitive Forces Shape Strategy, Harvard Business Review, March-April 1979, Product no.79208.

- Porter, M. E. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: Free Press. 1980
- Porter, M. E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Free Press. 1985
- Porter's Five Forces - Assessing the Balance of Power in a Business Situation. (n.d.). Retrieved June 20, 2013 from [http://www.mindtools.com/pages/article/newTMC\\_08.htm](http://www.mindtools.com/pages/article/newTMC_08.htm)
- Rosmarin, R. (2012, June 19). Why Gears Of War Costs \$60. Retrieved May 27, 2013 from [http://www.forbes.com/2006/12/19/ps3-xbox360-costs-tech-cx\\_rr\\_game06\\_1219expensivegames.html](http://www.forbes.com/2006/12/19/ps3-xbox360-costs-tech-cx_rr_game06_1219expensivegames.html)
- Rysman, M. (2009). The Economics of Two-Sided Markets. *Journal of Economic Perspectives*, 23(3), p125-143.
- Say Hello to the New Xbox 360. (n.d.) Retrieved June 18, 2013 from <http://www.xbox.com/en-CA/Xbox360/Consoles/Standard/Home>
- Strauss, P. (2013, May 20). PS4 Console Design Sneak Preview Outed in Announcement Video. Retrieved June 16, 2013 from <http://technabob.com/blog/2013/05/20/ps4-console-design-sneak-preview/>
- Suarez, F.R. (2005). Network Effects Revisited: The Role of Strong Ties in Technology Selection. *Academy of Management Journal*, 48(4), p710-720.
- Surette, T. (2005, August 17). Xbox 360 pricing revealed: \$299 and \$399 models due at launch. Retrieved June 16, 2013 from <http://www.gamespot.com/news/xbox-360-pricing-revealed-299-and-399-models-due-at-launch-6131245?>
- Tanous, J. (2013, March 17). The Best-Selling Video Game Consoles of All Time. Retrieved June 25, 2013 from <http://www.tekrevue.com/2013/03/17/compared-the-best-selling-video-game-consoles-of-all-time/>
- Tansel, U. (2013, April 6). Can China Save Global Sales of Game Consoles? Retrieved May 25, 2013 from <http://www.globaltoynews.com/2013/04/can-china-save-global-sales-of-game-consoles.html>
- Tayo, S. (2013, February 20). The Problem with Episodic Games. Retrieved May 25, 2013 from <http://leviathyn.com/games/editorials/2013/02/20/the-problem-with-episodic-games/>
- Torillo, M. (2013). Informal discussion, May 4, 2013
- Torillo, M. (2013). Informal discussion, May 6, 2013
- Torillo, M. (2013). Informal discussion, June 19, 2013
- The Best Features of the Sony PlayStation 3 (PS3). (n.d.). Retrieved June 16, 2013 from <http://thefanboy.hubpages.com/hub/Why-You-Should-Buy-a-Sony-PS3>
- Trends in U.S. Video Gaming – The Rise of Cross-Platform. (2013, September 3). Retrieved May 26, 2013 from <http://www.nielsen.com/us/en/newswire/2012/the-latest-trends-in-us-video-gaming.html>
- V7 Entertainment Inc. (2011, September). V7 Entertainment Inc. Business Plan Summary and Investment Prospectus.

- V7 Entertainment Inc. (2013). The Enigma Business Overview.
- What is Wii. (2013). Retrieved June 2, 2013 from <http://www.nintendo.com/wii/what-is-wii/#/overview>
- White, M.C. (2013, February 11). Game Over? Why Video-Game-Console Sales Are Plummeting. Retrieved May 26, 2013 from <http://business.time.com/2013/02/11/game-over-why-video-game-console-sales-are-plummeting/>
- Why the Nintendo Wii is so Successful. (2007, August 17). Retrieved June 2, 2013 from <http://cybersurge.org/2007/08/17/why-the-nintendo-wii-is-so-successful/>
- Wii Consoles. (n.d.). Retrieved June 5, 2013 from <http://www.bestbuy.com/site/Nintendo-Wii/Wii-Hardware-Console/abcat0706001.c?id=abcat0706001>
- Wii U GamePad. (2013). Retrieved June 19, 2013 from <http://wiiudaily.com/wii-u-gamepad/>
- Wilson, T.V. (2012, October 22). How HD-DVD Works. Retrieved June 15, 2013 from <http://www.howstuffworks.com/hd-dvd3.htm>
- World Television Signal Guide. (n.d.). Retrieved July 1, 2013 from <http://countrycode.org/tv-standards>